Service Manual

ORDER NO.
RRV2231

PORTABLE DVD PLAYER

PDV-10

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Remarks
	PDV-10		
ZBW	○	AC230V Adapter	
ZL	○	AC230V Adapter	

● This service manual should be used together with the following manual(s):

Model No.	Order No.	Remarks
PDV-LC10	RRV2212	

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
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PIONEER ELECTRONIC (EUROPE) N.V. Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Allexandra Road, #04-01, Singapore 159936
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T–ZZR OCT. 1999 Printed in Japan

■ CONTRAST OF MISCELLANEOUS PARTS

NOTES :
- *Parts marked by " NSP " are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Reference Nos. indicate the pages and Nos. in the service manual for the base model.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560 Ω → 56 × 10 [1] → 561 ..... RD1/4PU [5][6][1] J
47k Ω → 47 × 10 [3] → 473 ..... RD1/4PU [4][7][3] J
0.5 Ω → R50 ..... RN2H [R][5][0] K
1 Ω → 1R0 ..... RS1P [1][R][0] K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562 × 10 [1] → 5621 ..... RN1/4PC [5][6][2][1] F

■ CONTRAST TABLE

PDV-10/ZL, PDV-10/ZBW and PDV-LC10/ZL are constructed the same except for the following :

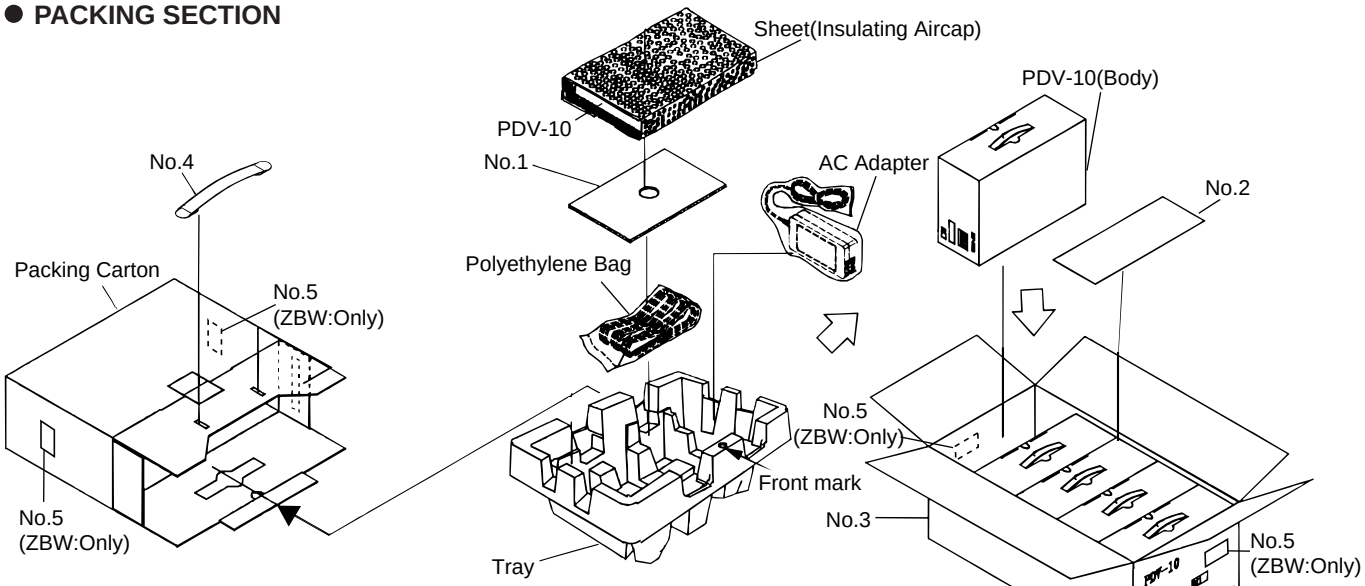
Ref. No.	Mark	Symbol and Description	Part No.			Remarks
			PDV-LC10 / ZL type	PDV-10 / ZL type	PDV-10 / ZBW type	
		PCB ASSEMBLIES				
P9-8	NSP	PDVDM ASSY	VWS1407	VWS1408	VWS1408	
P9-26		MAIN ASSY (PDVDM Assy)	VXX2677	VXX2690	VXX2690	
		PACKING				
P5-20		Battery Pack (NI-MH)	VEM1026	Not used	Not used	
P5-21		Packing Case (Boby)	VHG1866	Not used	Not used	
P5-22		Packing Case (Battery)	VHG1868	Not used	Not used	
P5-23		Packing Carton	VHG1870	VHG1885	VHG1885	
P5-26	⚠	Battery Charger	VWY1060	Not used	Not used	
P5-27		Battery Case	VXX2696	Not used	Not used	
P5-28		Mirror Mat Sheet	DHL1050	VHB1074	VHB1074	Insulating Aircap
P5-29		Pad A	VHB1072	Not used	Not used	
P5-30		Pad B	VHB1073	Not used	Not used	
P5-31		Packing Plat (Side)	VHC1054	Not used	Not used	
		Intermediate Plat	Not used	VHC1046	VHC1046	No.1
		Bottom Board	Not used	VHC1048	VHC1048	No.2
		Master Carton	Not used	VHG1884	VHG1884	No.3
		Hand hold	Not used	VEE1006	VEE1006	No.4
		ZBW LAVEL	Not used	Not used	VRW1812	N0.5
		EXTERIOR				
P7-1		LCD Cover	VNA2070	Not used	Not used	
P7-2		Insulating Sheet L	VEC2080	Not used	Not used	
P7-3		Earth Plate B	VBK1092	Not used	Not used	
P7-4		LCD Monitor	VXX2668	Not used	Not used	
P7-5		LCD Monitor PCB Assy	VXX2669	Not used	Not used	
P7-6		Inverter PCB Assy	VXX2670	Not used	Not used	
P7-7		Protective Tape	VEC2073	Not used	Not used	
P7-8		Cushion B	VEC1311	Not used	Not used	
P7-9		Cover Plate	VNH1056	Not used	Not used	
P7-10		Speaker	VVY1002	Not used	Not used	
P7-11		Earth Plate A	VBK1091	Not used	Not used	

Ref. No.	Mark	Symbol and Description	Part No.			Remarks
			PDV-LC10 / ZL type	PDV-10 / ZL type	PDV-10 / ZBW type	
P7-12		LCD Locker	VNK4492	Not used	Not used	
P7-13		Locker Spring	VBH1316	Not used	Not used	
P7-14		Cushion C	VEB1307	Not used	Not used	
P7-15		Mode Button	VNK4486	Not used	Not used	
P7-16		Earth Plate C	VNH1057	Not used	Not used	
P7-17		Switch Cap	VNK4481	Not used	Not used	
P7-18		Flexible Sheet	VEC2084	Not used	Not used	
P7-19		F.P.C 22P	VNP1693	Not used	Not used	
P7-20		Rear Cover	VNK4484	Not used	Not used	
P7-22		LCD Holder	VNK4485	Not used	Not used	
P9-1		Body Assy	VXA2375	VXA2377	VXA2377	
P9-7		Electrostatic Sheet	VEC2082	VEC2121	VEC2121	
P9-9		Selector Knob	VNK4478	Not used	Not used	
P9-13		Power Knob	VNK4477	VNK4541	VNK4541	
P11-1		Top Cover	VNK4471	VNK4519	VNK4519	
		Name Plate	Not used	VAM1090	VAM1090	No.6
P11-6		Leg Rubber	VBH1302	VEB1313	VEB1313	
P11-14		Free Stopper	VXB1001	Not used	Not used	
		Spacer C	Not used	VEC2100	VEC2100	No.7

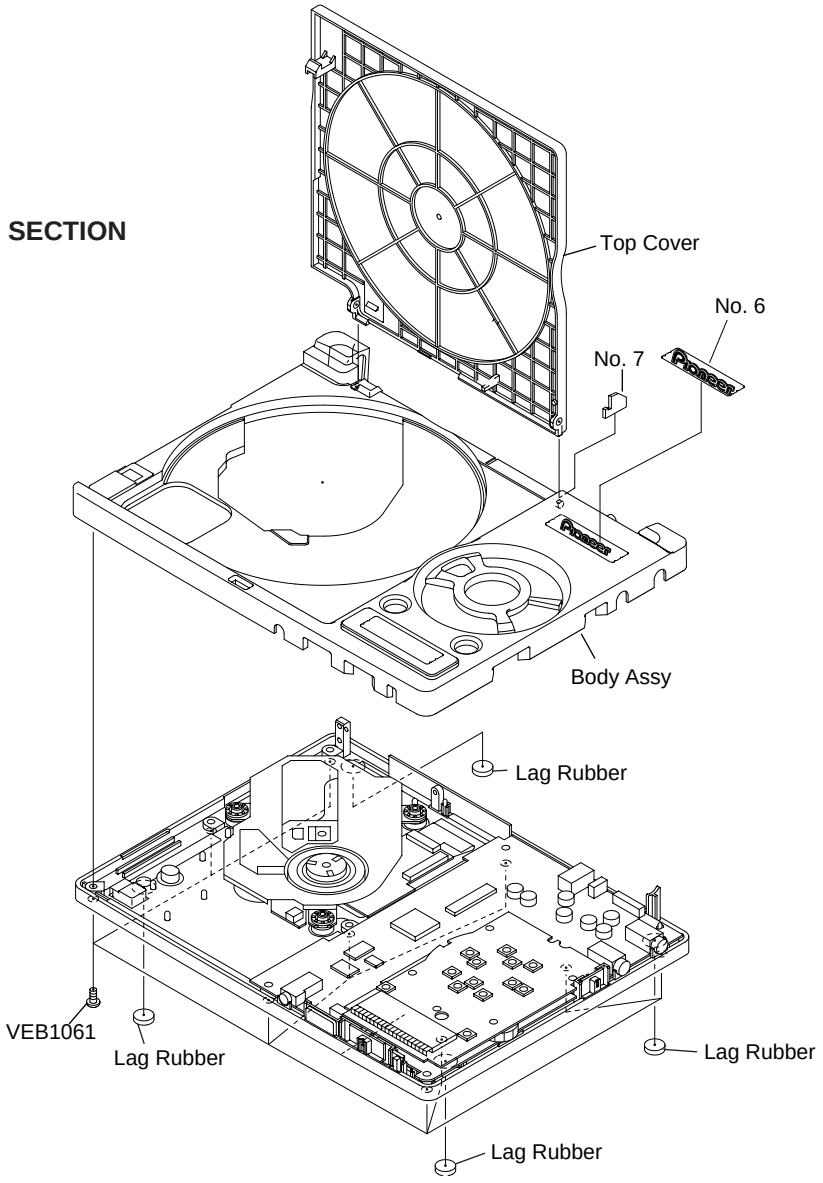
Note : • The numbers in the remarks column correspond to the numbers on the exploded diagram. Refer to “EXPLDED VIEWS”

■ EXPLDED VIEWS

● PACKING SECTION



● EXTERIOR SECTION



■ CONTRAST TABLE OF PCB ASSEMBLIES

AF PDVDM ASSY

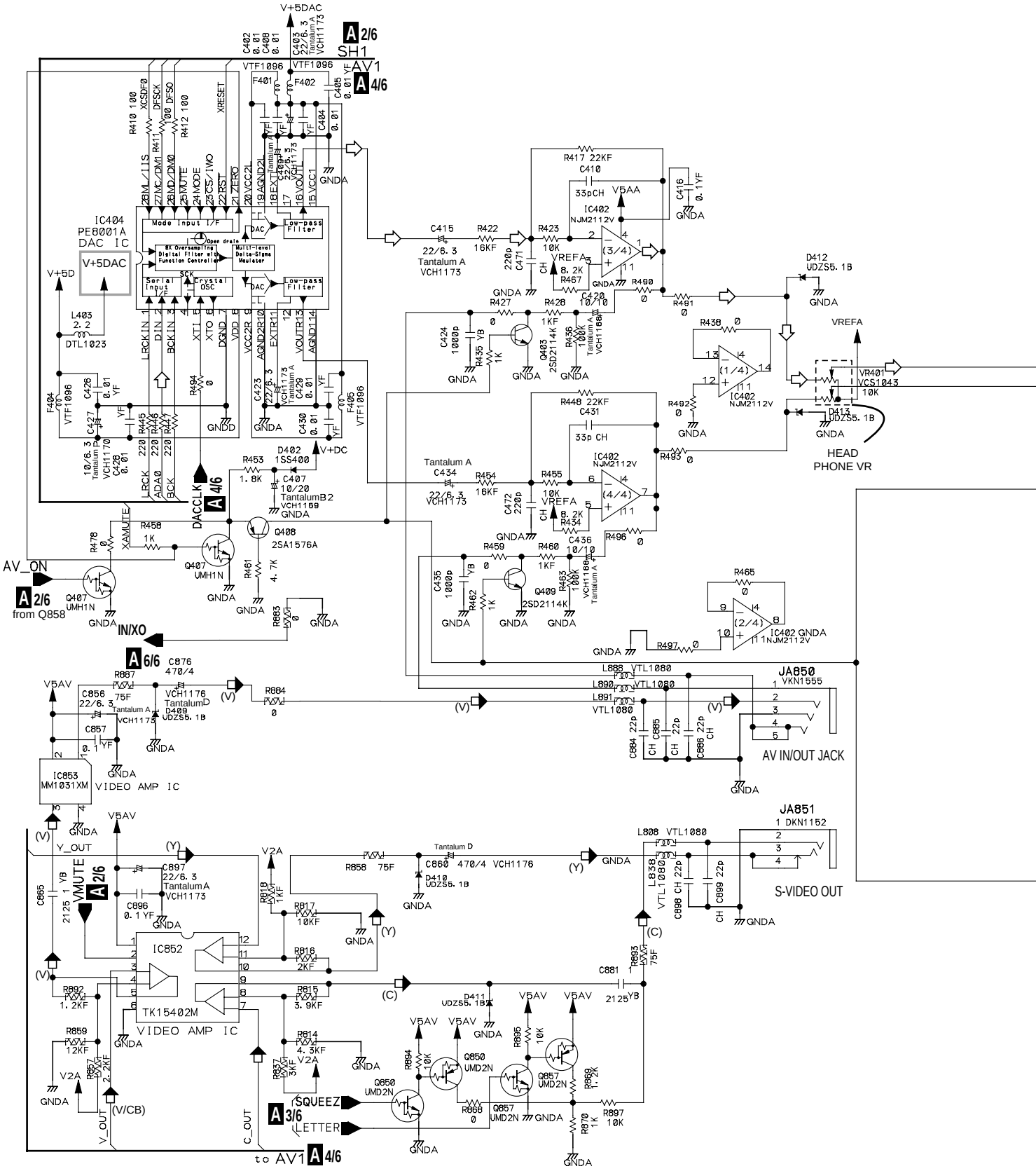
VWS1408 and VWS1407 are constructed the same except for the following :

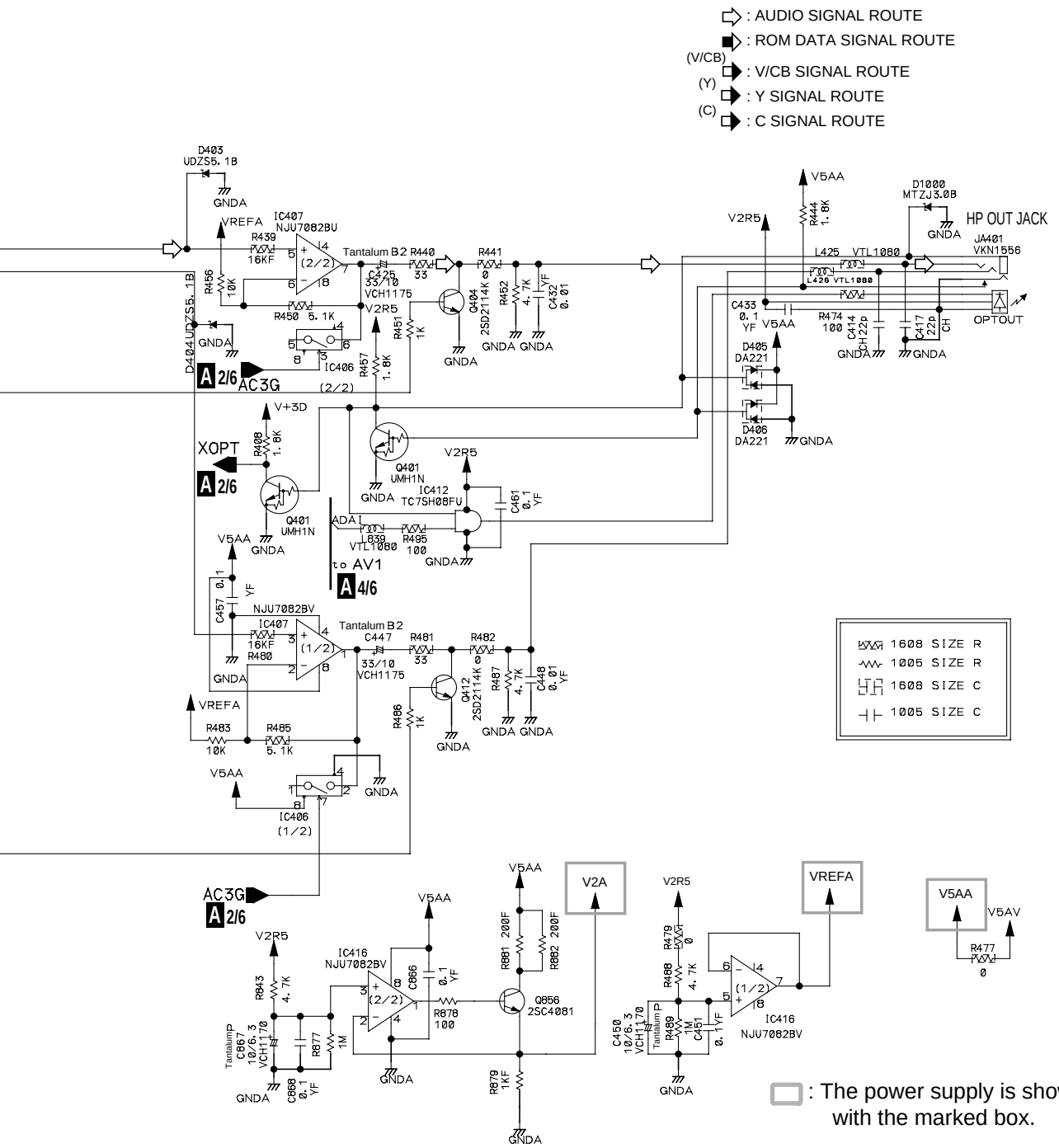
Mark	Symbol and Description	Part No.		Remarks
		VWS1407	VWS1408	
	IC401	NJM2100V	Not used	
	IC403, IC405	TC74HC4053AFT	Not used	
	IC415, IC417	NJM2073M	Not used	
	IC851	NJM2235V	Not used	
	Q13	UMH9N	Not used	
	Q402, Q413, Q854	2SD2114K	Not used	
	Q405	DTA124EUA	Not used	
	Q406, Q411	UMH1N	Not used	
	Q410	UMD2N	Not used	
	Q853	2SA1576A	Not used	
	Q858	DTC124EUA	Not used	
	D611	UDZS5.1B	Not used	
	L5	VTL1122	Not used	
	L12	VTL1123	Not used	
	L14	VTL1124	Not used	
	F2	DTF1098	Not used	
	C4, C36, C453, C454, C455	CKSSYF104Z16	Not used	
	C462, C878	CKSSYF104Z16	Not used	
	C42	VCH1171	Not used	
	C401, C406	VCH1168	Not used	
	C411, C439	CKSRYB473K16	Not used	
	C422, C437, C438, C470	CKSSYB223K16	Not used	
	C413, C418, C419, C421	VCH1174	Not used	
	C412, C440	CKSRYB122K50	Not used	
	C456	CKSSYF103Z50	Not used	
	C467, C468	VCH1169	Not used	
	C628	CKSSYB103K16	CKSSYF103Z50	
	C855	VCH1175	Not used	
	C858, C859, C877, C882	CKSRYB104K16	Not used	
	R470, R414	RS1/16S1002F	Not used	
	R401, R404, R406, R407, R437, R464	RS1/16SS1602F	Not used	
	R438, R465	RS1/16SS1602F	RS1/16SS0R0J	
	S601	QSG1003	Not used	
	S850	VSH1023	Not used	
	CN401	VKN1464	Not used	

■ SCHEMATIC DIAGRAM

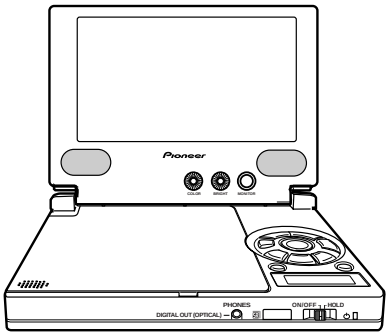
■ PDVDM ASSY(5/6) (ANALOG AV SECTION)

A F 5/6 PDVDM ASSY(5/6)
(PDV-10 : VWS1408)




: AUDIO SIGNAL ROUTE
: ROM DATA SIGNAL ROUTE
(V/CB) : V/CB SIGNAL ROUTE
(Y) : Y SIGNAL ROUTE
(C) : C SIGNAL ROUTE
D403 UDZS5.1B
GNDA
VREFA
IC407 NJU7082BU
R439 16KF
Tantalum B2 R440
R441
C425 33/10 VCH1175
Q404 2SD2114K
R452 4.7K
C432 0.01 YF
R456 10K
R450 5.1K
R451 1K
R457 1.8K
IC406 (2/2)
D404 UDZS5.1B
A 2/6 AC3G
V2R5
V5AA
R444 1.8K
D1000 MTZJ3.0B
HP OUT JACK
JA401 VKN1556
L425 VTL1080
C433 0.1 YF
R474 100
C414 22p CH
C417 22p CH
OPTOUT
D405 DA221
D406 DA221
V+3D
R408 1.8K
XOPT
A 2/6
Q401 UMH1N
IC412 TC7SH08FU
C461 0.1 YF
ADAI
L839 VTL1080
R495 100
to AV1
A 4/6
C457 0.1 YF
NJU7082BV
IC407 16KF
R480
Tantalum B2 C447 33/10 VCH1175
R481 33
R482
Q412 2SD2114K
R487 4.7K
C448 0.01 YF
R486 1K
R483 10K
R485 5.1K
IC406 (1/2)
1608 SIZE R
1005 SIZE R
1608 SIZE C
1005 SIZE C
AC3G
A 2/6
IC416 NJU7082BV
C866 0.1 YF
R843 4.7K
R877 1M
TantalumP C867 10/6.3 VCH1170
C868 0.1 YF
R878 100
Q856 2SC4081
RB81 200F
RB82 200F
R879 1KF
V2A
VREFA
R479 0
R488 4.7K
R489 1M
C451 0.1 YF
C450 10/6.3 VCH1170
V5AV
R477 0
: The power supply is shown with the marked box.

Service Manual



ORDER NO.
RRV2212

PORTABLE DVD PLAYER

PDV-LC10

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Remarks
	PDV-LC10		
ZY	○	AC230V Adapter or Battery pack	
ZU/CA	○	AC120V Adapter or Battery pack	
ZL	○	AC230V Adapter or Battery pack	

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1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

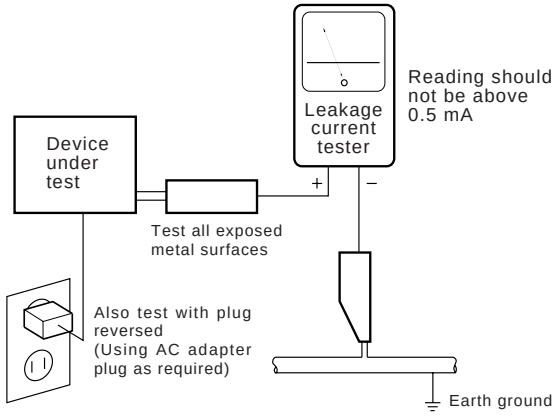
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60 Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5 mA.


Leakage current tester
Reading should not be above 0.5 mA
Device under test
+
–
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage , etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

WARNING!

The AEL(accessible emission level) of the laser power output is less than **CLASS 1** but the laser component is capable of emitting radiation exceeding the limit for **CLASS 1 .**

A specially instructed person should do servicing operation of the apparatus.

CAUTION :

LASER RADIATION WHEN OPEN, AVOID LONG-TERM VIEWING OF DIRECT LASER RADIATION.

LASER DIODE CHARACTERISTICS

FOR DVD : MAXIMUM OUTPUT POWER : 3.2 mw
WAVELENGTH : 650 nm
FOR CD : MAXIMUM OUTPUT POWER : 3.3 mw
WAVELENGTH : 780 nm

CAUTION :

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

CAUTION

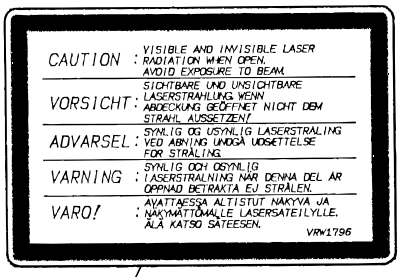
Danger of explosion if battery is incorrectly replaced.

Replaced only with the same or equivalent type recommended by the manufacture.
Discord used batteries according to the manufacture's instructions.

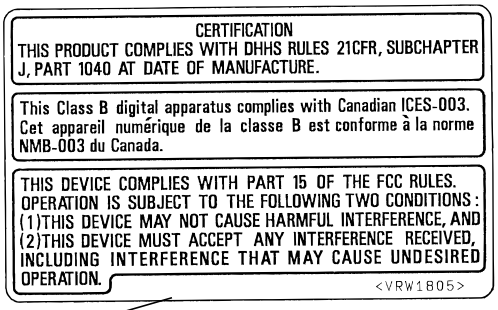
CAUTION :

TO PREVENT RISK OF ELECTRIC SHOCK AND LASER EXPOSURE, DISCONNECT THE AC ADAPTER OR THE BATTERY BEFORE REMOVE SCREWS.

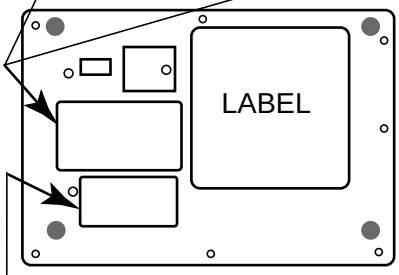
LABEL CHECK


CAUTION : VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
VORSICHT : SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETZEN!.
ADVARSEL : SYNLIG OG USYNLIG LASERSTRALING VED ABNING UNDGÅ UDSETTELSE FOR STRÅLING.
VARNING : SYNLIG OCH OSYNLIG LASERSTRALNING NÄR DENNA DEL ÄR ÖPPNAD BETRAKTA EJ STRÅLEN.
VARO! : AVATTAESSA ALTISTUT NÄKYVÄ JA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEN.
VRW1796

ZY Type Only : VRW1796


CERTIFICATION
THIS PRODUCT COMPLIES WITH DHHS RULES 21CFR, SUBCHAPTER J, PART 1040 AT DATE OF MANUFACTURE.
This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.
THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1)THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2)THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.
<VRW1805>

ZU/CA Type Only : VRW1805



To Reverse side

ZY Type Only : VRW-328

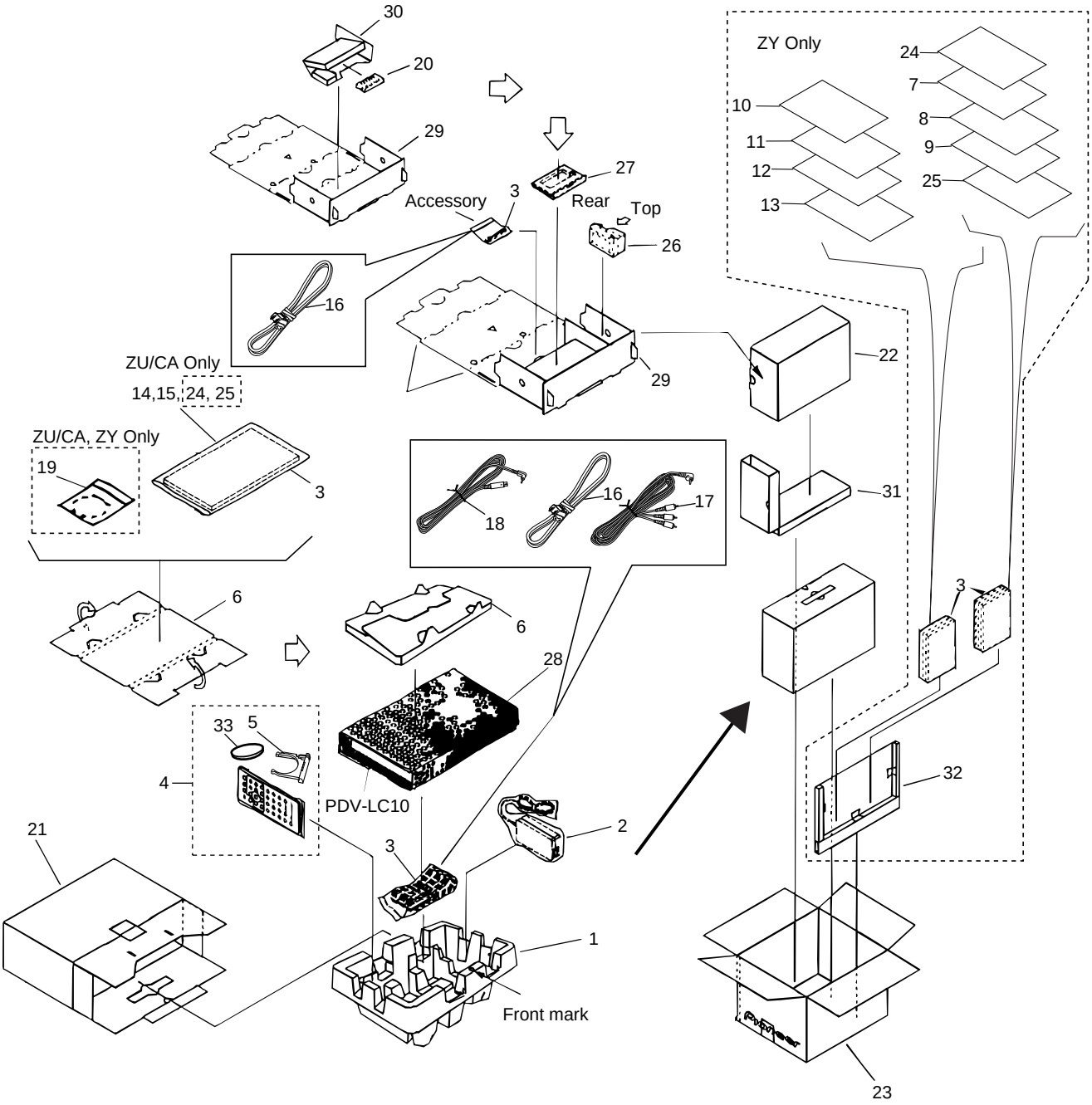
Additional Laser Caution

1. Laser Interlock Mechanism
   If the switch to detect door-open state (S603: DISC OPEN DET) is open, the laser interlock mechanism operates and shuts down the power source (Q100) to the laser diode drive circuit. The system microcomputer detects this condition and does not issue the Laser On command.
   If Q100 is defective, accompanying a short-circuit between the emitter and the collector, the system microcomputer judges this status as the door-open state, and it does not issue the Laser On command as long as Q611 is not defective, even if S603 is open.
   Therefore, the laser does not light unless S603 is intentionally short-circuited in door-open state.
   To light the laser in Test mode, short-circuit S603.
   Hold S603 in the depressed position from the top, as it is a push switch.
2. NEVER directly look at the objective lens from a short distance when lighting the laser by short-circuiting S603 in door-open state.

2. EXPLODED VIEWS AND PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on the product are used for disassembly.*

2.1 PACKING



(1) PACKING PARTS LIST

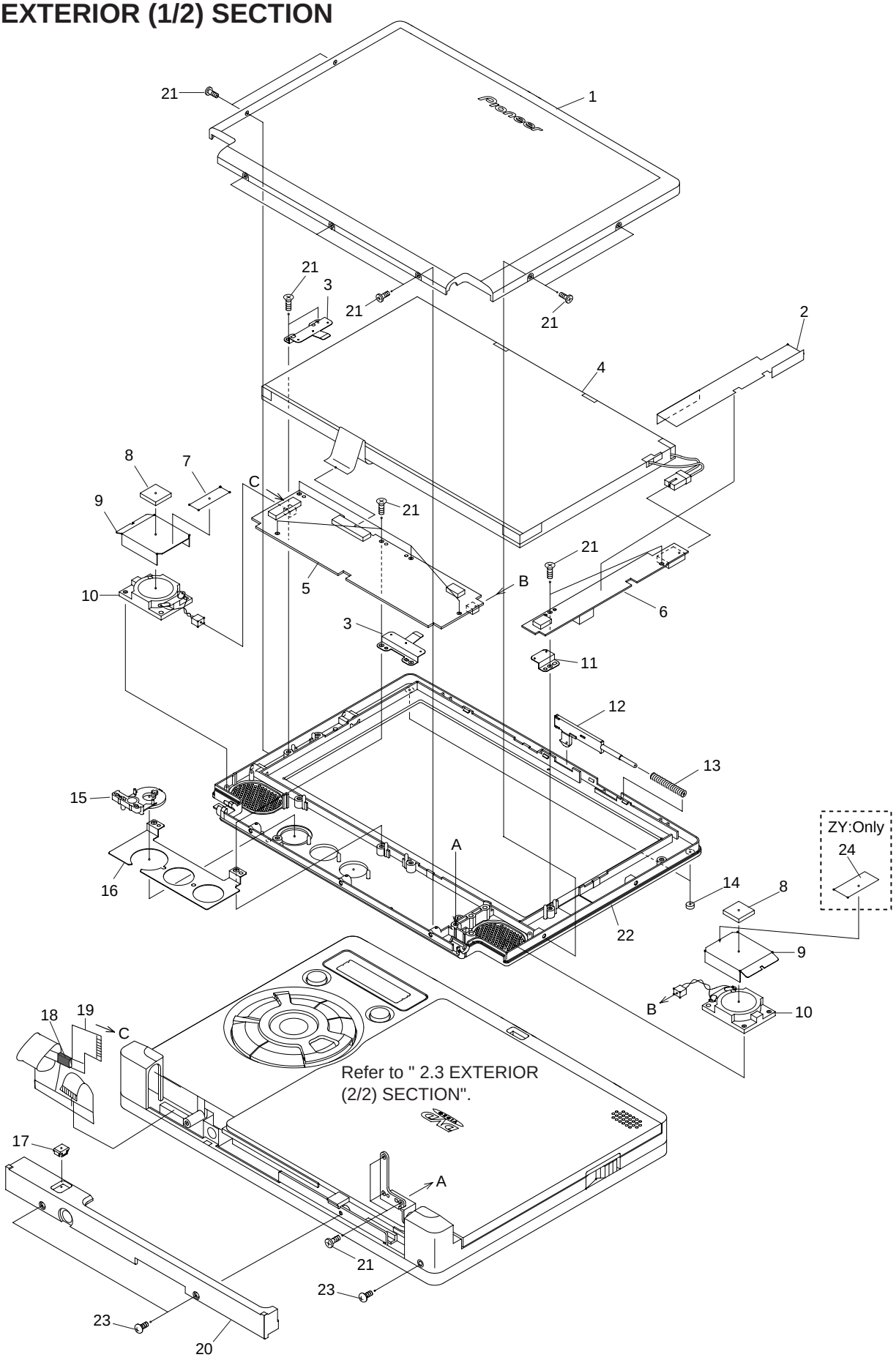
Mark	No.	Description	Part No.
	1	Tray	VHB1069
⚠	2	AC Adapter	See Contrast table (2)
	3	Polyethylene Bag	See Contrast table (2)
	4	Remote control unit (CU-PDV003)	VXX2639
	5	Battery Holder (Remote)	VNK4490
	6	Packing Plat (Top)	VHC1045
	7	Operating Instructions	See Contrast table (2)
	8	Operating Instructions	See Contrast table (2)
	9	Operating Instructions	See Contrast table (2)
	10	Operating Instructions	See Contrast table (2)
	11	Operating Instructions	See Contrast table (2)
	12	Operating Instructions	See Contrast table (2)
	13	Operating Instructions	See Contrast table (2)
	14	Operating Instructions	See Contrast table (2)
	15	Operating Instructions	See Contrast table (2)
⚠	16	AC Power cord	See Contrast table (2)
	17	AV Cable	VDE1058
	18	S-Video Cable	VDE1059
	19	Optical fiber Cable	See Contrast table (2)
	20	Battery Pack (NI-MH)	VEM1026
	21	Packing Case (Boby)	VHG1866
	22	Packing Case (Battery)	VHG1868
	23	Packing Carton	See Contrast table (2)
NSP	24	Warranty Card	See Contrast table (2)
NSP	25	Caution	See Contrast table (2)
⚠	26	Battery Charger	VWY1060
	27	Battery Case	VXX2681
	28	Mirror Mat Sheet	DHL1050
	29	Pad A	VHB1072
	30	Pad B	VHB1073
	31	Packing Plat (Side)	VHC1054
	32	Packing Plat	See Contrast table (2)
NSP	33	Lithium Battery(CR2025)	VEM1009

(2) CONTRAST TABLE

PDV-LC10/ZY, ZU/CA and ZL are constructed the same except for the following:

Mark	No.	Symbol and Description	Part No.			Remarks
			ZY type	ZU/CA type	ZL type	
⚠	2	AC Adapter	VWX1222	VWX1220	VXX2696	
	3	Polyethylene Bag	Z21-020	VHL1051	Z21-020	
	7	Operating Instructions (Dutch)	VRD1103	Not used	Not used	
	8	Operating Instructions (Swedish)	VRD1104	Not used	Not used	
	9	Operating Instructions (Spanish)	VRD1105	Not used	Not used	
	10	Operating Instructions (English)	VRB1241	Not used	Not used	
	11	Operating Instructions (French)	VRD1100	Not used	Not used	
	12	Operating Instructions (German)	VRD1102	Not used	Not used	
	13	Operating Instructions (Italian)	VRD1101	Not used	Not used	
	14	Operating Instructions (English)	Not used	VRB1240	VRB1242	
	15	Operating Instructions (Chinese)	Not used	Not used	VRD1106	
⚠	16	AC Power cord	ADG1127	RDG1034	ADG1127	
	19	Optical fiber Cable	VDE1062	VDE1062	Not used	
	23	Packing Carton	VHG1867	VHG1869	VHG1870	
NSP	24	Warranty Card	ARY7022	ARY7023	Not used	
NSP	25	Caution	VRM1076	VRM1076	Not used	
	32	Packing Plat	VHC1055	Not used	Not used	

2.2 EXTERIOR (1/2) SECTION



(1) EXTERIOR (1/2) SECTION PARTS LIST

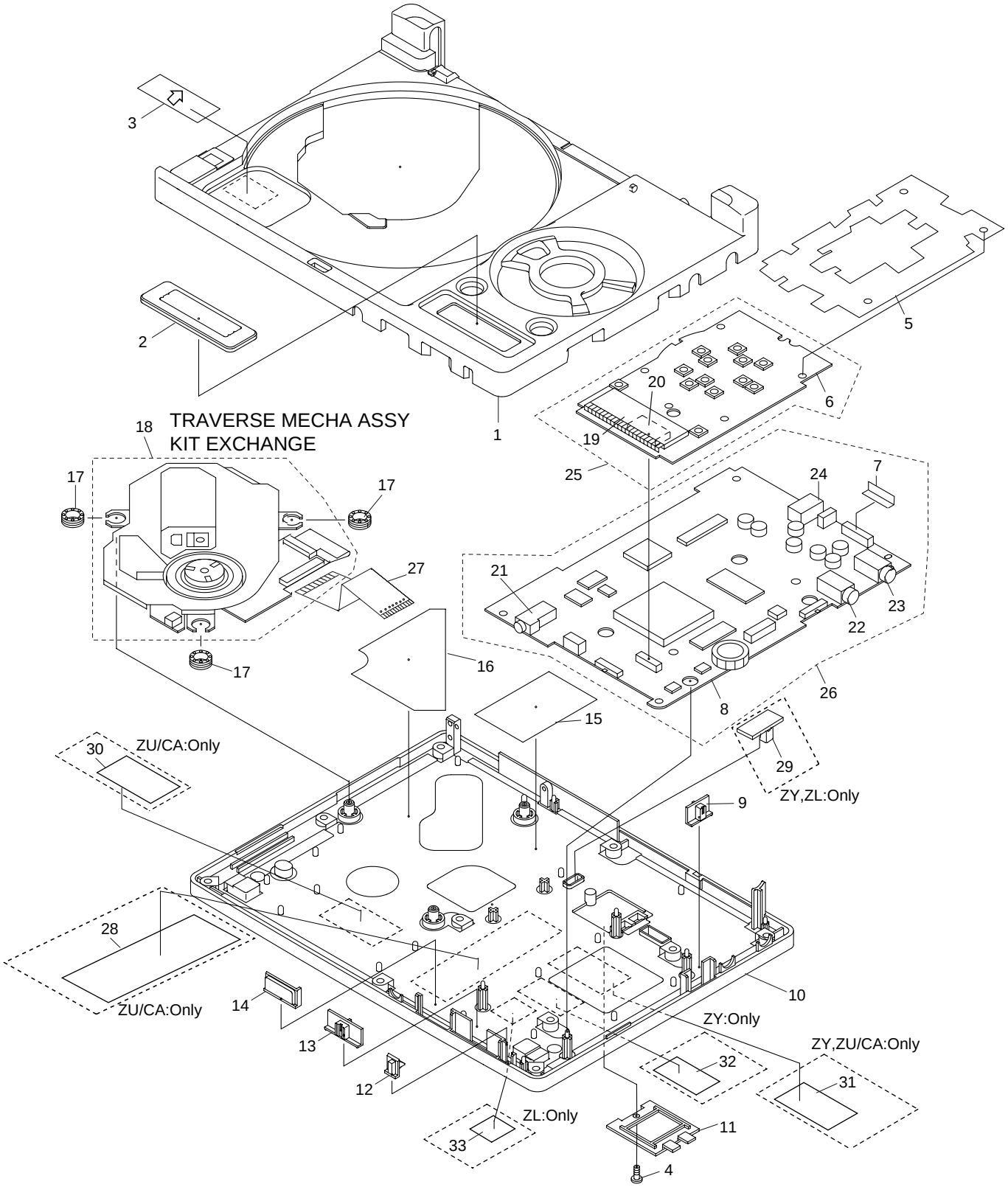
Mark	No.	Description	Part No.
	1	LCD Cover	VNA2070
	2	Insulating Sheet L	VEC2080
	3	Earth Plate B	VBK1092
	4	LCD Monitor	VXX2668
	5	LCD Monitor PCB Assy	See Contrast table (2)
	6	Inverter PCB Assy	VXX2670
	7	Protective Tape	VEC2073
	8	Cushion B	VEB1311
	9	Cover Plate	VNH1056
	10	Speaker	VVY1002
	11	Earth Plate A	VBK1091
	12	LCD Locker	VNK4492
	13	Locker Spring	VBH1316
	14	Cushion C	VEB1307
	15	Mode Button	VNK4486
	16	Earth Plate C	VNH1057
	17	Switch Cap	VNK4481
	18	Flexible Sheet	VEC2084
	19	FPC 22P	VNP1693
	20	Rear Cover	VNK4484
	21	Screw P2x5	VBA1062
	22	LCD Holder	See Contrast table (2)
	23	Screw P2x6	VBA1061
	24	Conducting Tape	See Contrast table (2)

(2) CONTRAST TABLE

PDV-LC10/ZY, ZU/CA and ZL are constructed the same except for the following:

Mark	No.	Symbol and Description	Part No.			Remarks
			ZY type	ZU/CA type	ZL type	
	5	LCD Monitor PCB Assy	VXX2683	VXX2669	VXX2669	
	22	LCD Holder	VNK4485	VNK4599	VNK4485	
	24	Conducting Tape	VEC2115	Not used	Not used	

2.3 EXTERIOR (2/2) SECTION



(1) EXTERIOR (2/2) SECTION PARTS LIST

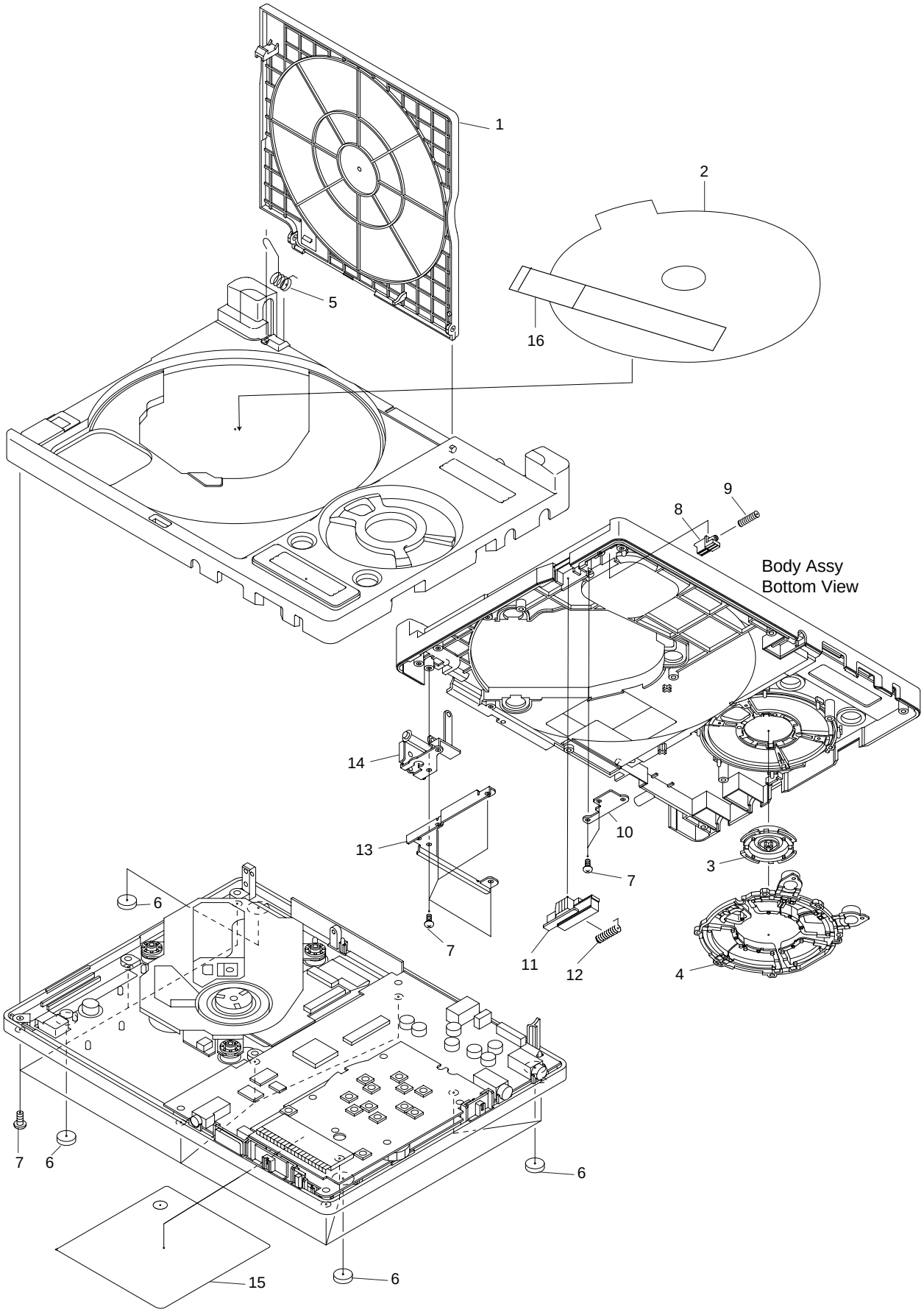
Mark	No.	Description	Part No.
	1	Body Assy	See Contrast table (2)
	2	Display Lens	VNK4475
	3	Caution Label	VRW1774
	4	• • • • •	
	5	Electrostatic Sheet C	VEC2114
NSP	6	PDVDS ASSY	See Contrast table (2)
	7	Electrostatic Sheet B	VEC2082
NSP	8	PDVDM ASSY	See Contrast table (2)
	9	Selector Knob	VNK4478
	10	Chassis Assy	See Contrast table (2)
	11	Connector Cover	VNK4480
	12	LED Lens	VNK4493
	13	Power Knob	VNK4477
	14	IR Filter	VNK4476
	15	Insulating Sheet A	VEC2065
	16	Cover Sheet	VEC2072
	17	Floating Rubber	VEB1303
	18	Traverse Mecha Assy	VXX2657
	19	Display LCD	VAW1051
NSP	20	Spacer	VEC2064
	21	Optical Mini Jack	VKN1556
	22	Mini Jack	DKN1152
	23	Mini Jack 4-Poie	VKN1555
	24	DC Power Mini Jack	VKN1557
	25	DISPLAY ASSY	See Contrast table (2)
	26	MAIN ASSY	See Contrast table (2)
	27	FFC ASSY	VXX2658
	28	65 Label	See Contrast table (2)
	29	N/P Selector Knob	See Contrast table (2)
	30	Label Service	See Contrast table (2)
	31	Caution Label	See Contrast table (2)
NSP	32	Caution Label (F)	See Contrast table (2)
	32	SISIR Label	See Contrast table (2)

(2) CONTRAST TABLE

PDV-LC10/ZY, ZU/CA and ZL are constructed the same except for the following:

Mark	No.	Symbol and Description	Part No.			Remarks
			ZY type	ZU/CA type	ZL type	
	1	Body Assy	VXA2375	VXA2389	VXA2375	
NSP	6	PDVDS ASSY	VWG2143	VWG2144	VWG2145	
NSP	8	PDVDM ASSY	VWS1406	VWS1381	VWS1407	
	10	Chassis Assy	VXA2376	VXA2390	VXA2376	
	25	DISPLAY ASSY	VXX2674	VXX2678	VXX2679	
	26	MAIN ASSY	VXX2673	VXX2659	VXX2677	
	28	65 Label	Not used	ARW7050	Not used	
	29	N/P Selector Knob	VNK4543	Not used	VNK4543	
	30	Label Service	Not used	VRW1815	Not used	
	31	Caution Label	VRW1796	VRW1805	Not used	
NSP	32	Caution Label (F)	VRW–328	Not used	Not used	
	33	SISIR Label	Not used	Not used	VRW1816	

2.4 EXTERIOR (UP-SIDE) SECTION



(1) EXTERIOR (UP-SIDE) SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Top Cover	See Contrast table (2)
	2	Carrying Spacer	VEE1009
	3	Cross Key	VNK4473
	4	Function Button	VNK4472
	5	Cover Spring	VBH1314
	6	Leg Rubber	VEB1302
	7	Screw P2x6	VBA1061
	8	Stopper	VNK4491
	9	Stopper Spring	VBH1315
	10	Keep Plate	VNH1058
	11	Open Knob	VNK4479
	12	Open Knob Spring	VBH1313
	13	Reinforcing Plate	VNH1055
	14	Free Stopper	VXB1001
	15	Label Assy	See Contrast table (2)
	16	Open Label	VRW1782

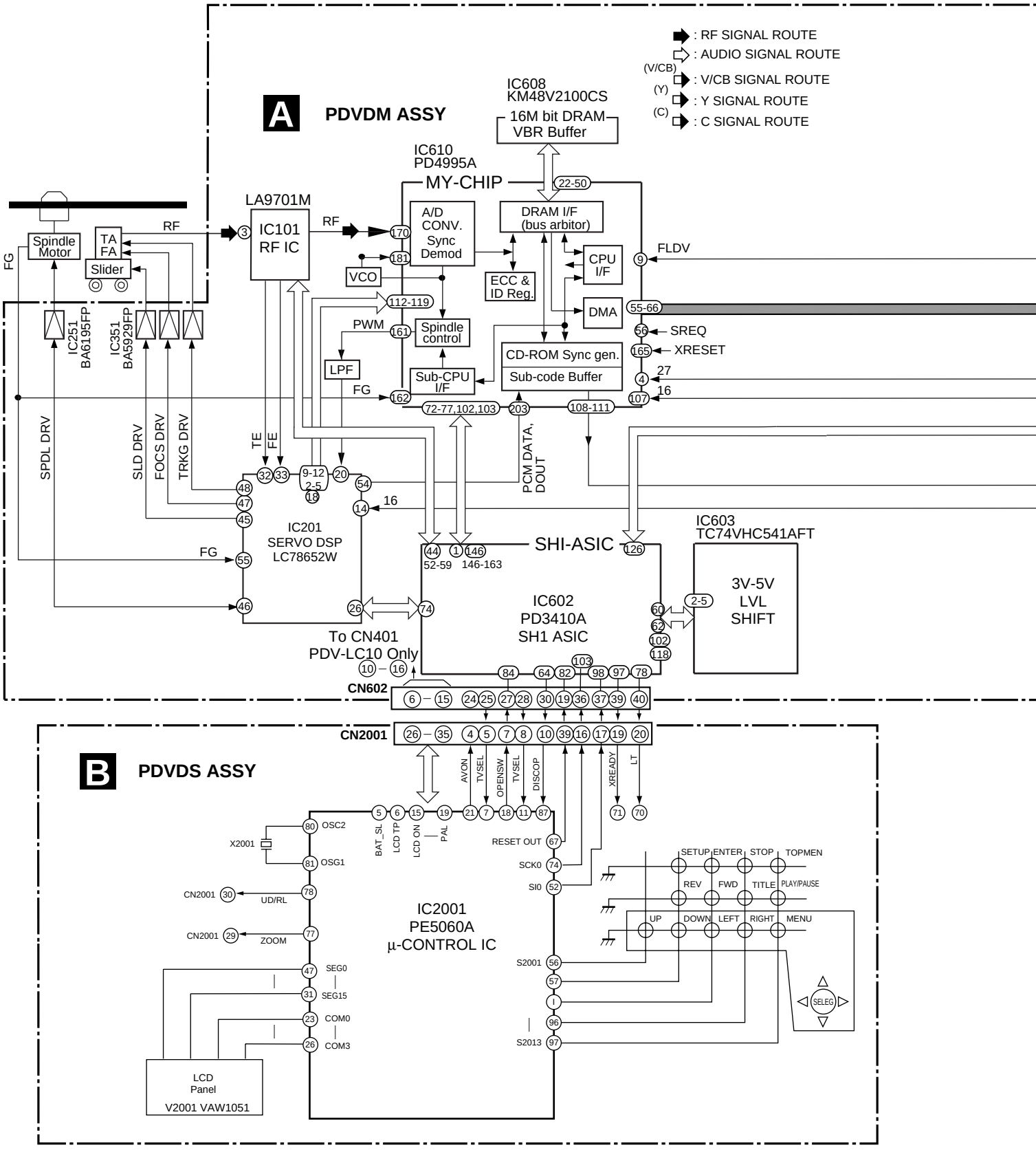
(2) CONTRAST TABLE

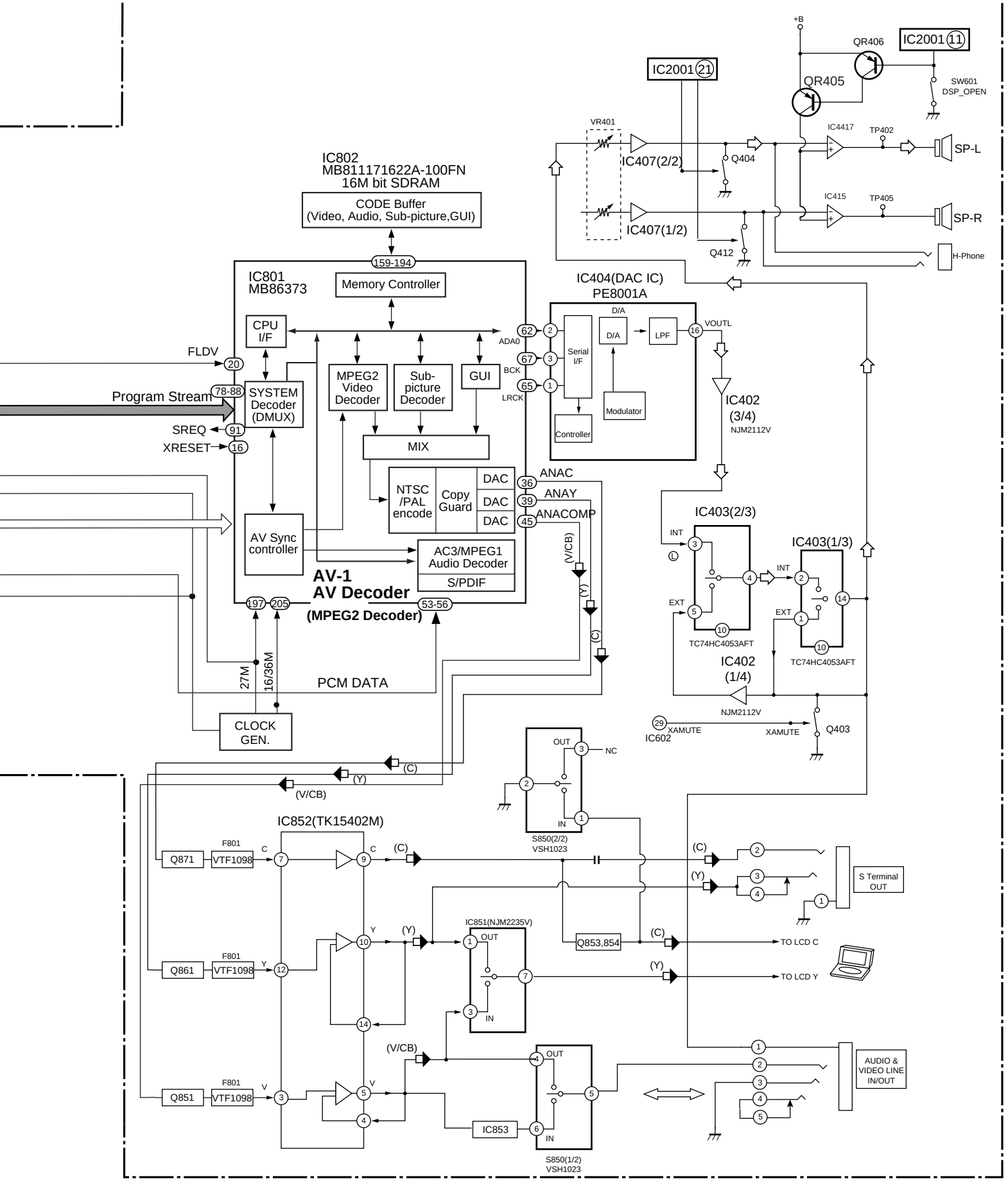
PDV-LC10/ZY, ZU/CA and ZL are constructed the same except for the following:

Mark	No.	Symbol and Description	Part No.			Remarks
			ZY type	ZU/CA type	ZL type	
	1	Top Cover	VNK4471	VNK4601	VNK4471	
	15	Label Assy	VRW1795	VRW1797	VRW1795	

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

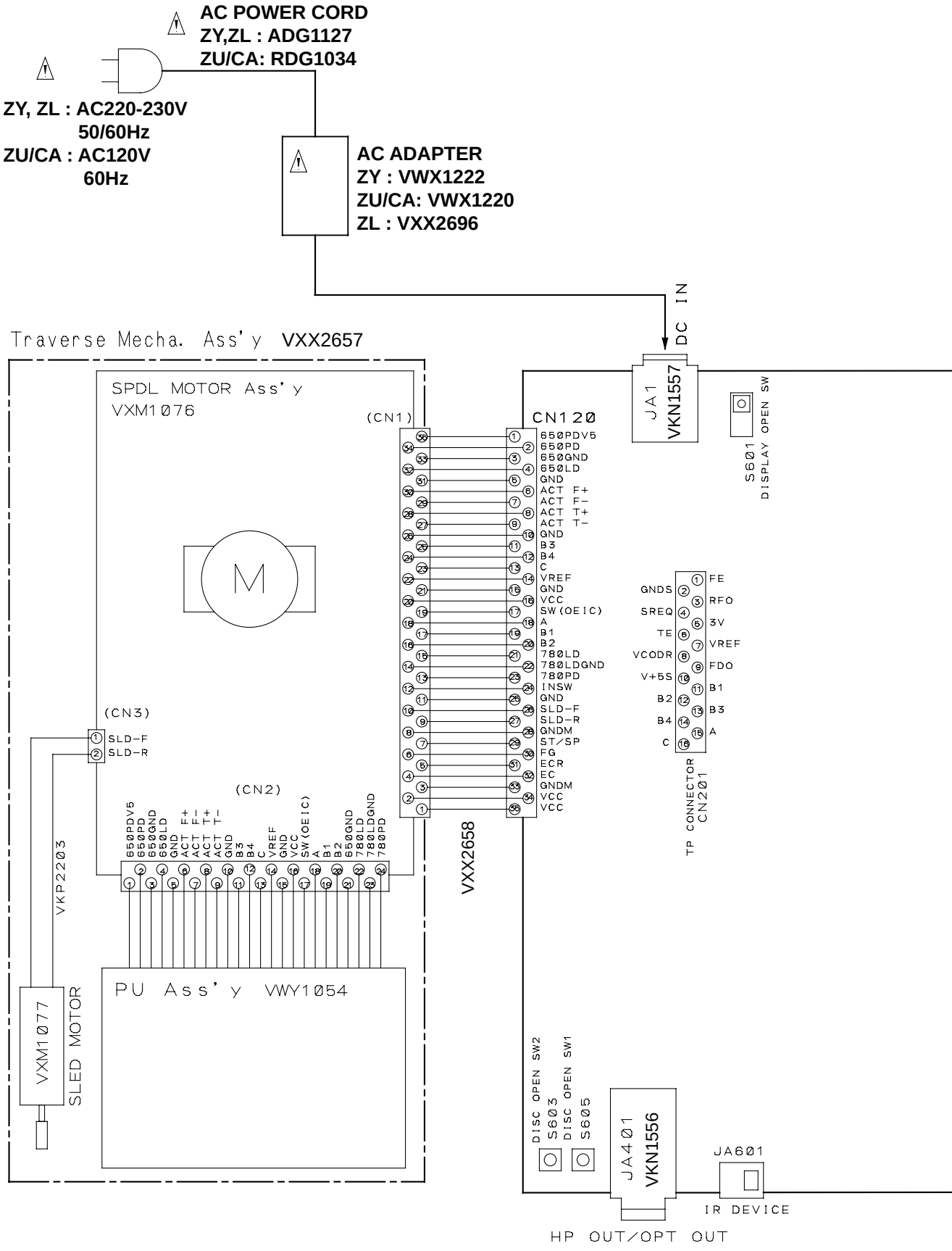
3.1 BLOCK DIAGRAM

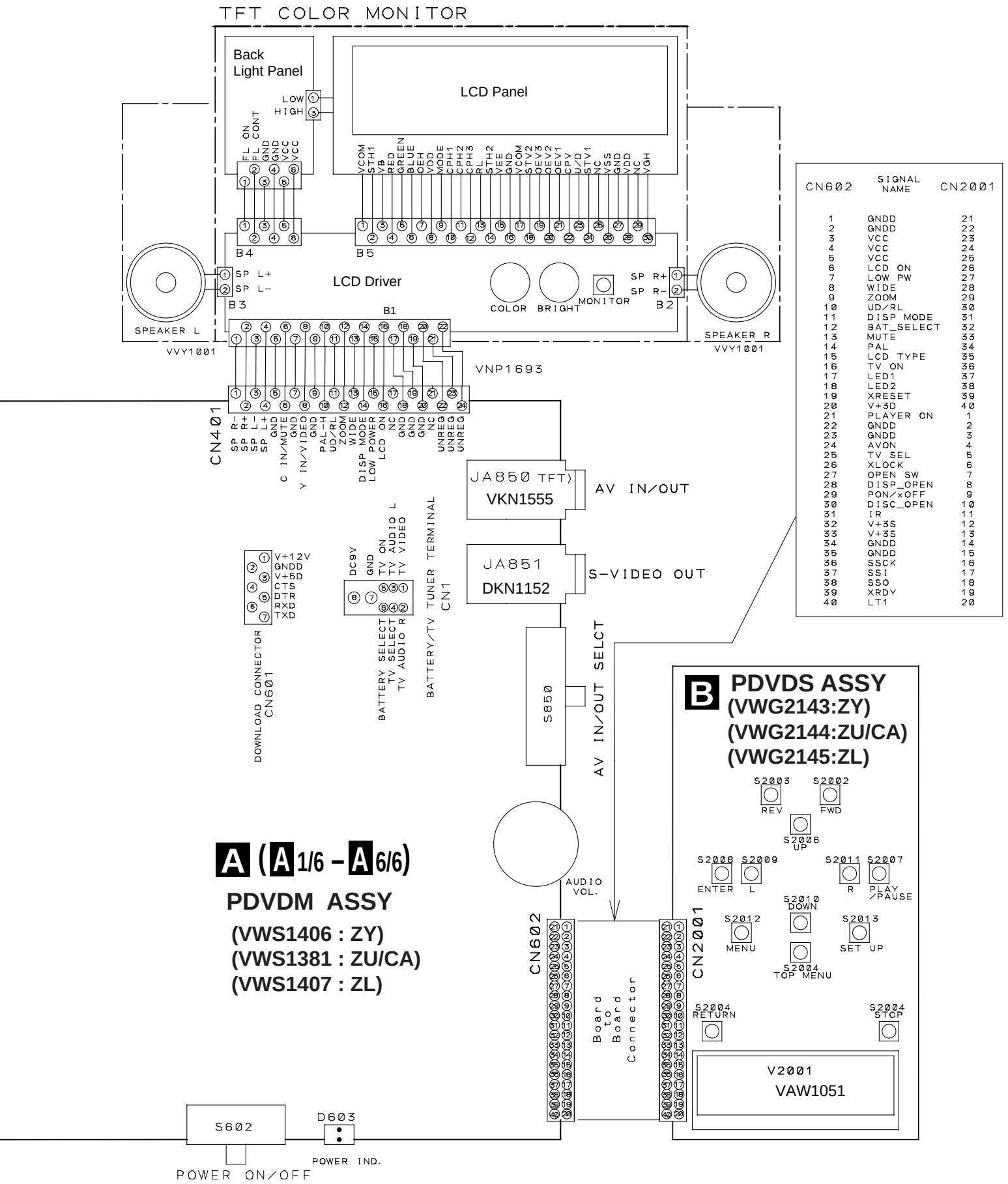



+B
QR406
IC2001 11
IC2001 21
QR405
SW601
DSP_OPEN
VR401
IC4417
TP402
SP-L
IC407(2/2)
Q404
IC415
TP405
SP-R
IC407(1/2)
Q412
H-Phone
IC802
MB811171622A-100FN
16M bit SDRAM
CODE Buffer
(Video, Audio, Sub-picture,GUI)
159-194
IC801
MB86373
Memory Controller
IC404(DAC IC)
PE8001A
CPU
I/F
D/A
LPF
VOUTL
ADA0
BCK
LRCK
Serial
I/F
Modulator
Controller
FLDV
20
Program Stream
78-88
SYSTEM
Decoder
(DMUX)
MPEG2
Video
Decoder
Sub-
picture
Decoder
GUI
SREQ
91
XRESET
16
MIX
IC402
(3/4)
NJM2112V
NTSC
/PAL
encode
Copy
Guard
DAC
ANAC
ANAY
ANACOMP
AV Sync
controller
AC3/MPEG1
Audio Decoder
S/PDIF
AV-1
AV Decoder
(MPEG2 Decoder)
197
205
53-56
(V/CB)
(Y)
(C)
IC403(2/3)
IC403(1/3)
INT
EXT
TC74HC4053AFT
IC402
(1/4)
NJM2112V
29
XAMUTE
IC602
Q403
27M
16/36M
PCM DATA
CLOCK
GEN.
OUT
NC
IN
S850(2/2)
VSH1023
IC852(TK15402M)
F801
Q871
VTF1098
C
Q861
Y
Q851
V
S Terminal
OUT
IC851(NJM2235V)
Q853,854
TO LCD C
TO LCD Y
IC853
S850(1/2)
VSH1023
AUDIO &
VIDEO LINE
IN/OUT

3.2 OVERALL WIRING DIAGRAM

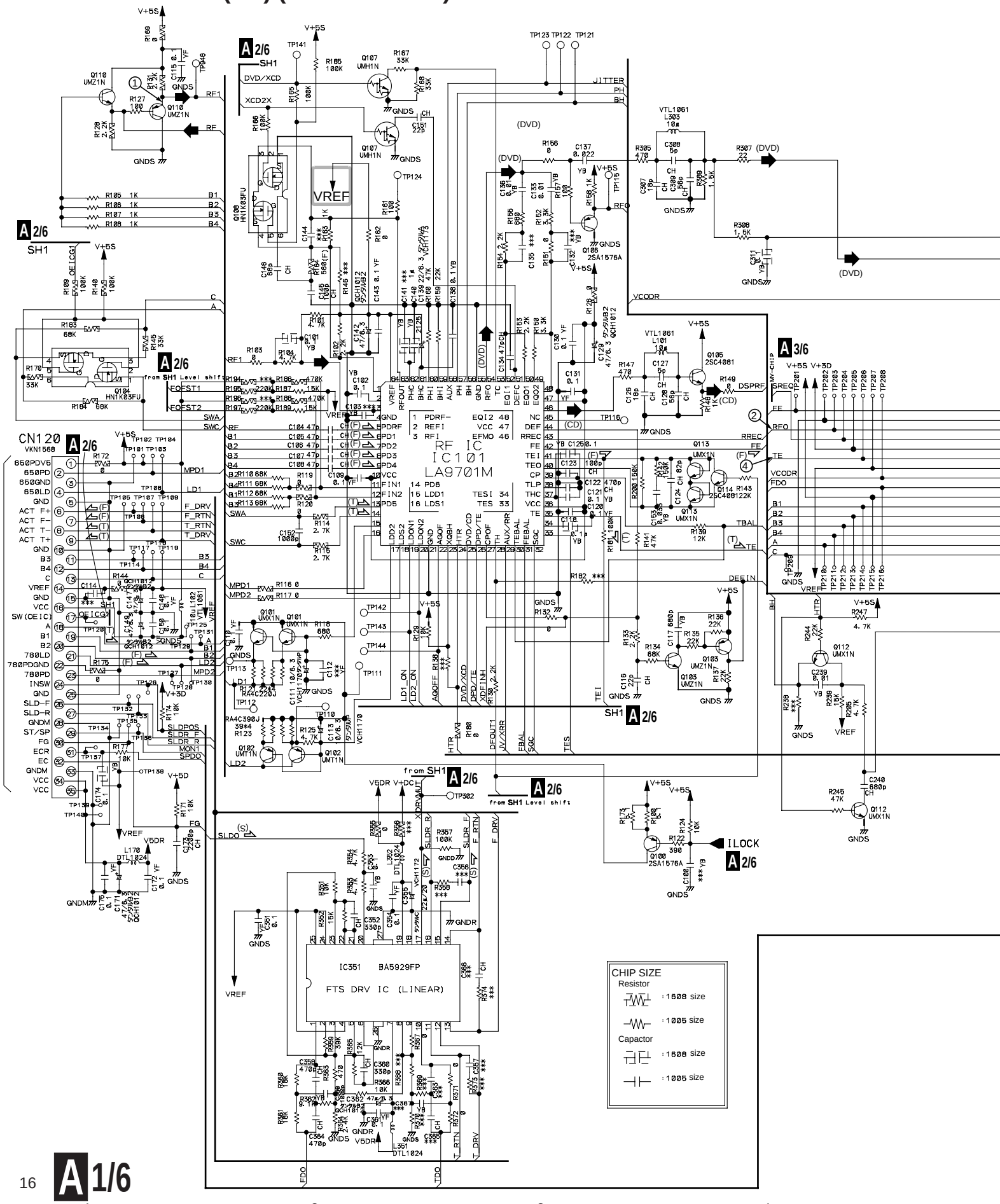
Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".

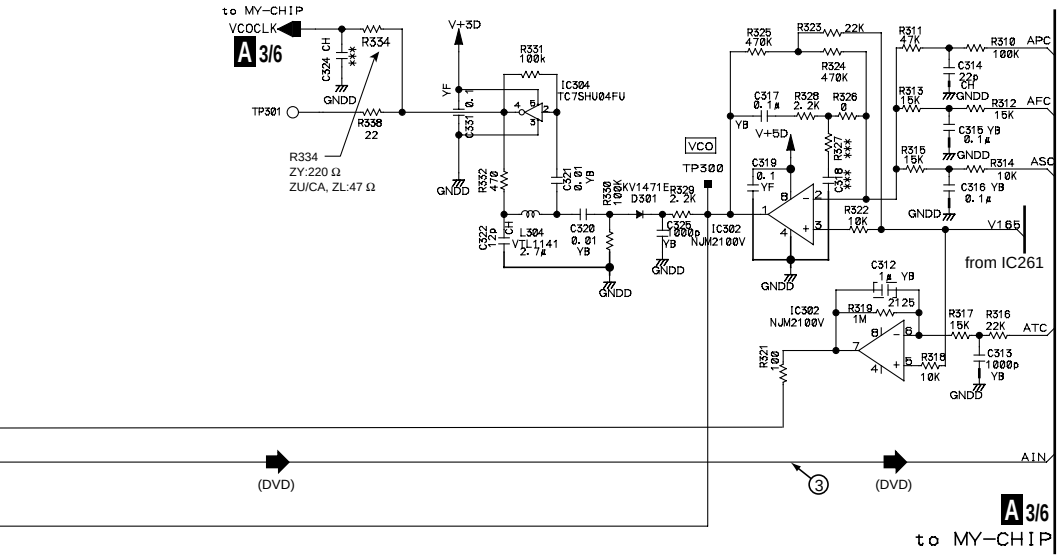




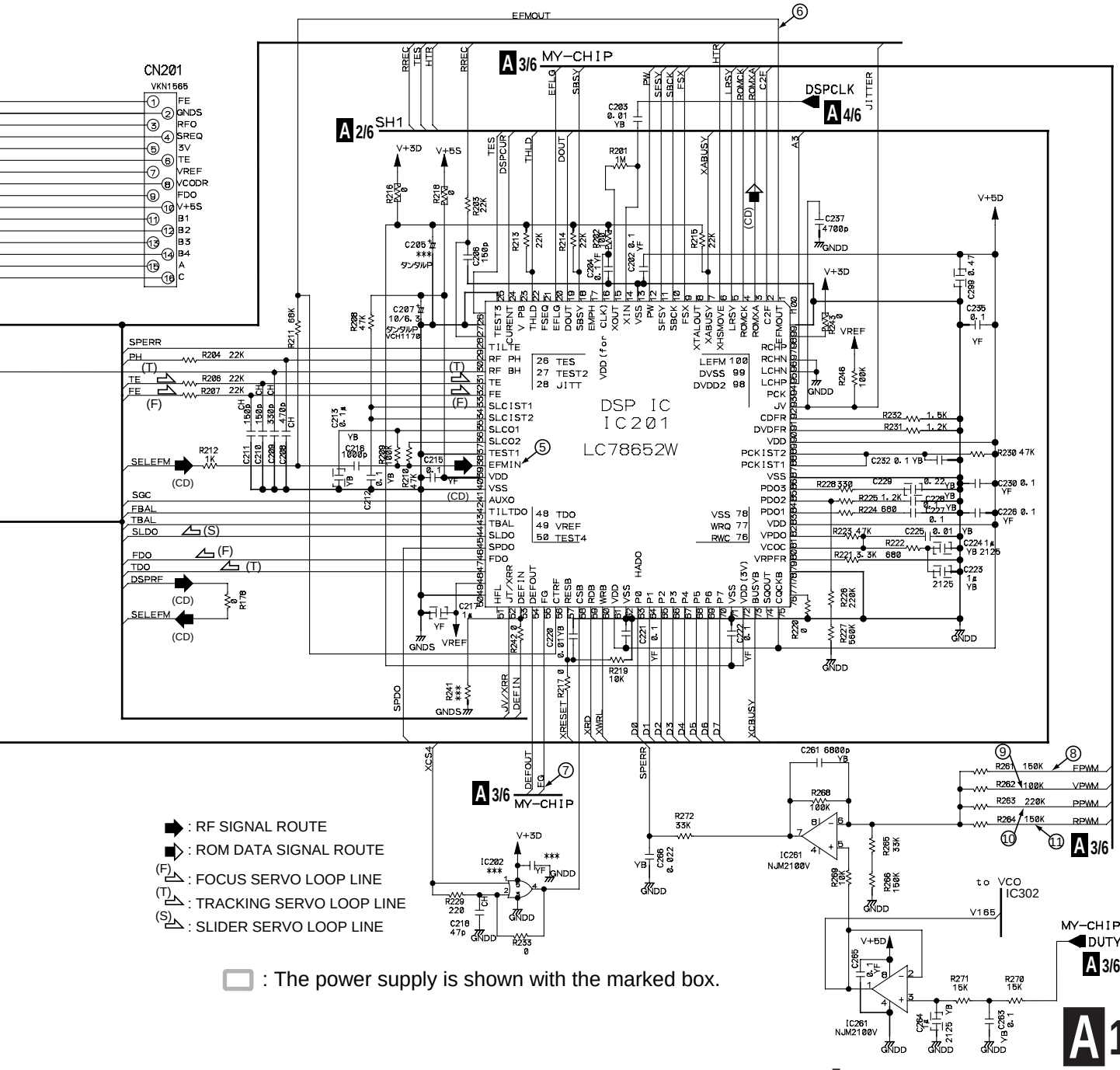
CN602	SIGNAL NAME	CN2001
1	GNDD	21
2	GNDD	22
3	VCC	23
4	VCC	24
5	VCC	25
6	LCD ON	26
7	LOW PW	27
8	WIDE	28
9	ZOOM	29
10	UD/RL	30
11	DISP MODE	31
12	BAT_SELECT	32
13	MUTE	33
14	PAL	34
15	LCD TYPE	35
16	TV ON	36
17	LED1	37
18	LED2	38
19	XRESET	39
20	V+3D	40
21	PLAYER ON	1
22	GNDD	2
23	GNDD	3
24	AVON	4
25	TV SEL	5
26	XLOCK	6
27	OPEN SW	7
28	DISP_OPEN	8
29	PON/xOFF	9
30	DISC_OPEN	10
31	IR	11
32	V+3S	12
33	V+3S	13
34	GNDD	14
35	GNDD	15
36	SSCK	16
37	SSI	17
38	SSO	18
39	XRDY	19
40	LT1	20

3.3 PDVDM ASSY (1/6) (FTS SECTION)





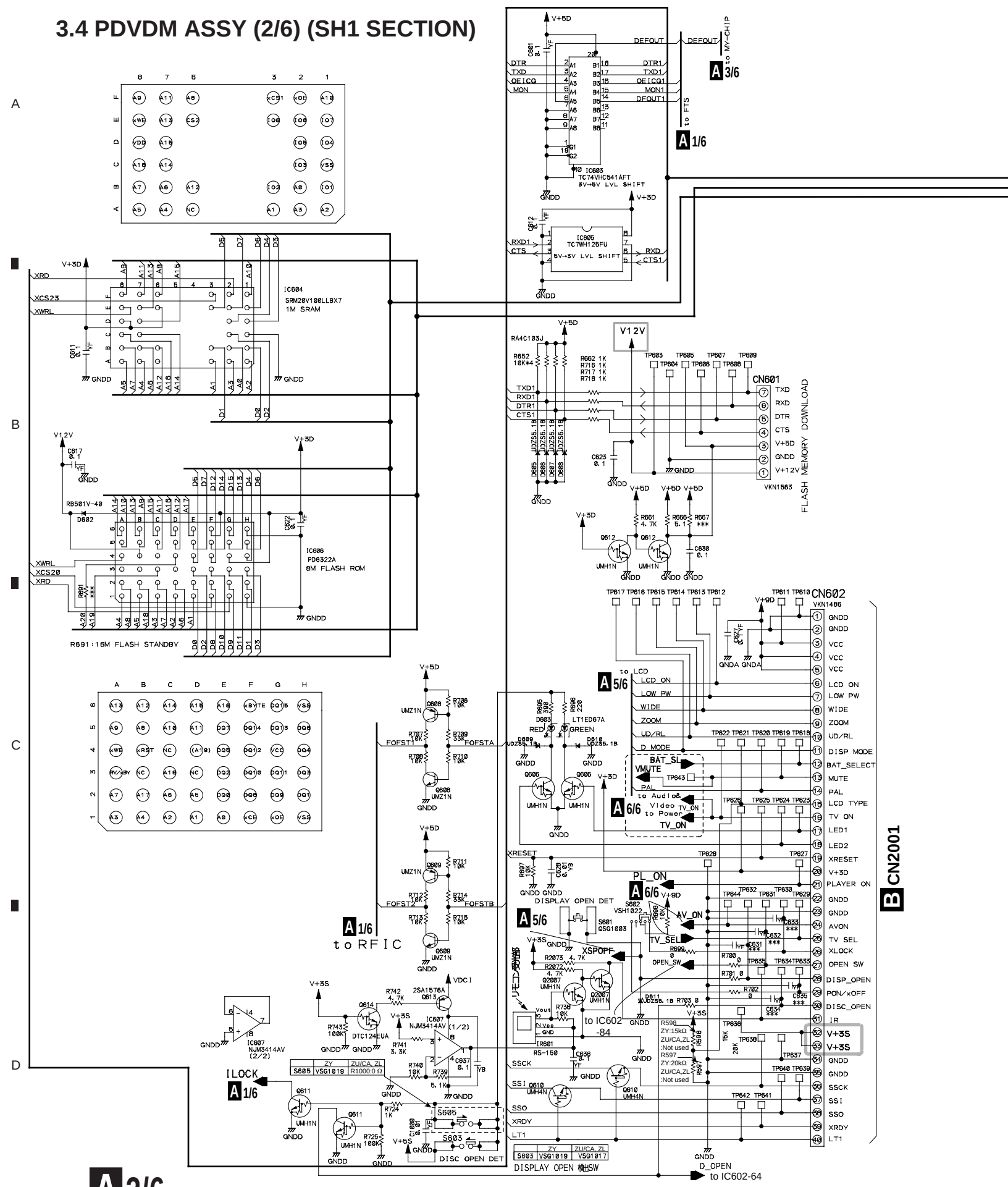
A 1/6 PDVDM ASSY(1/6)
(VWS1406:ZY)
(VWS1381:ZU/CA)
(VWS1407:ZL)



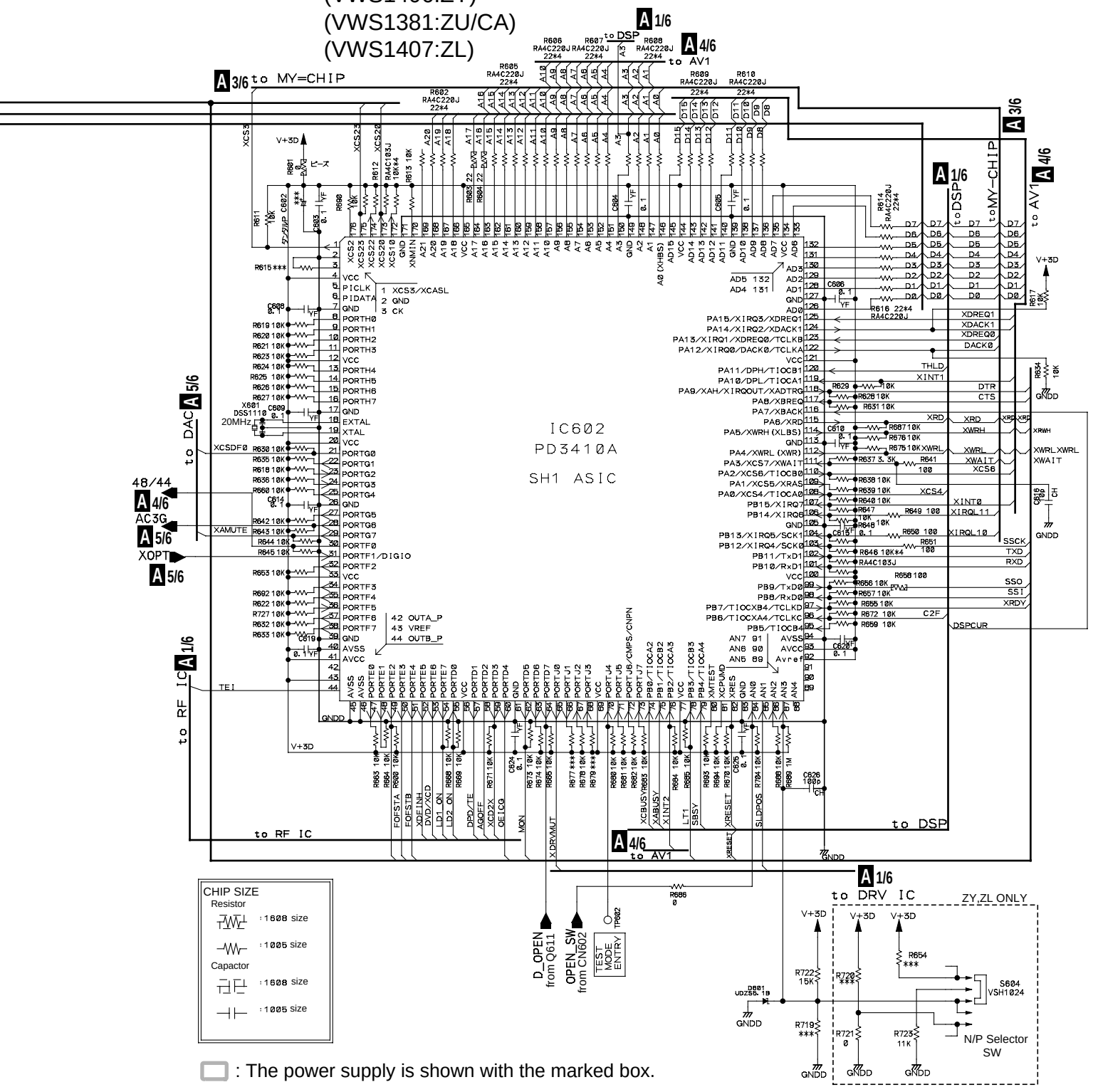
: RF SIGNAL ROUTE
: ROM DATA SIGNAL ROUTE
(F) : FOCUS SERVO LOOP LINE
(T) : TRACKING SERVO LOOP LINE
(S) : SLIDER SERVO LOOP LINE

: The power supply is shown with the marked box.

3.4 PDVDM ASSY (2/6) (SH1 SECTION)

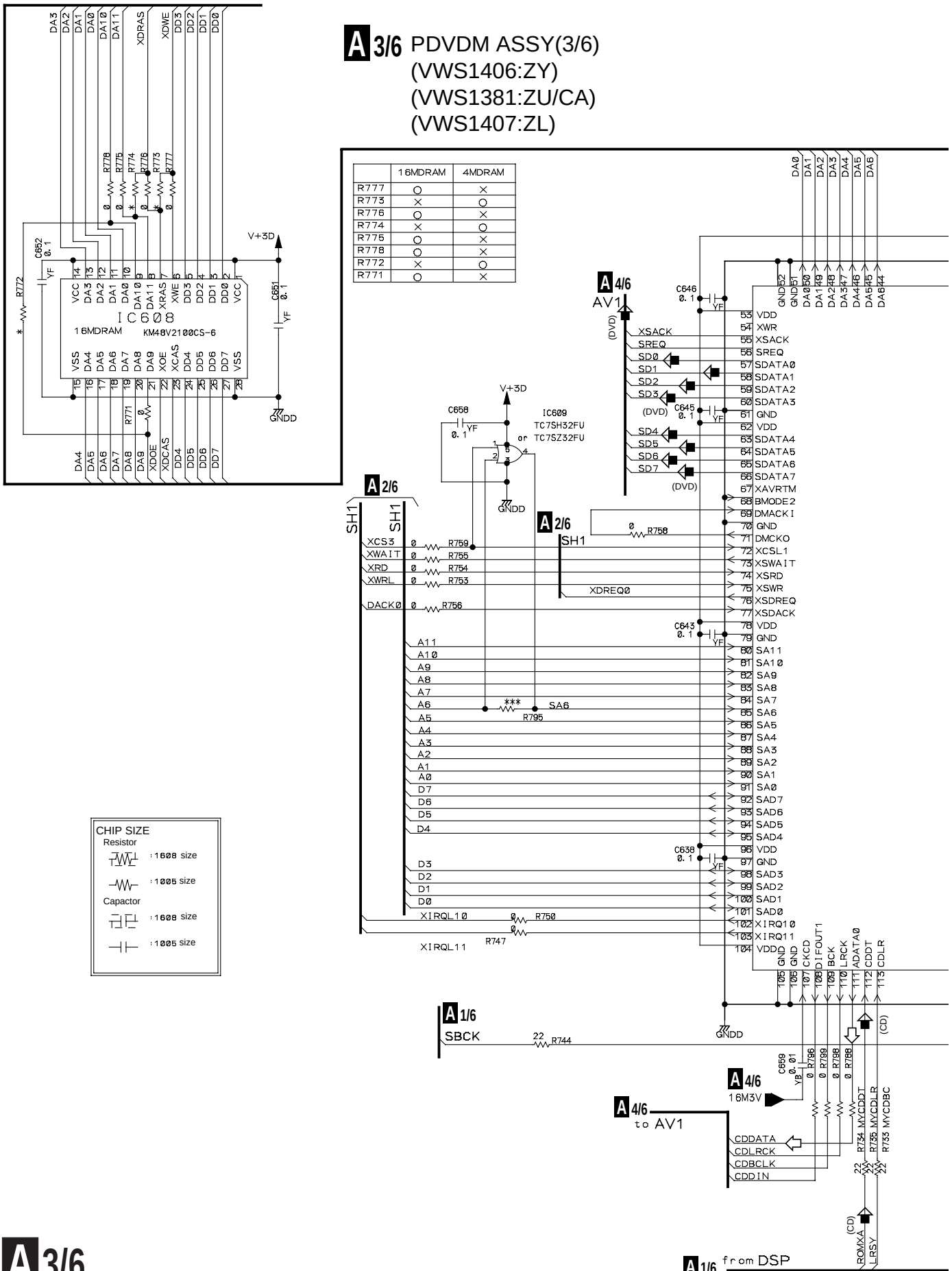


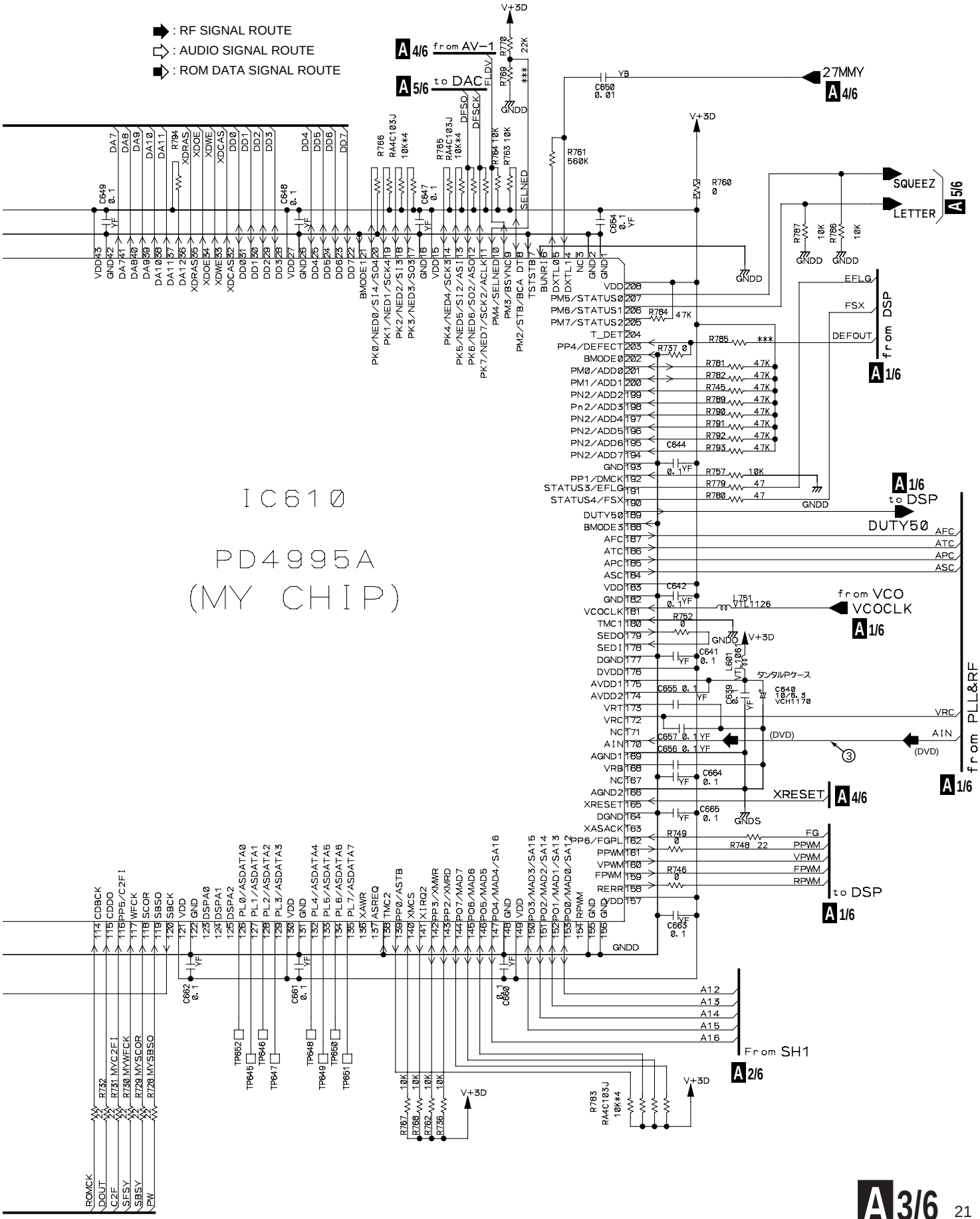
A 2/6 PDVDM ASSY(2/6)
(VWS1406:ZY)
(VWS1381:ZU/CA)
(VWS1407:ZL)



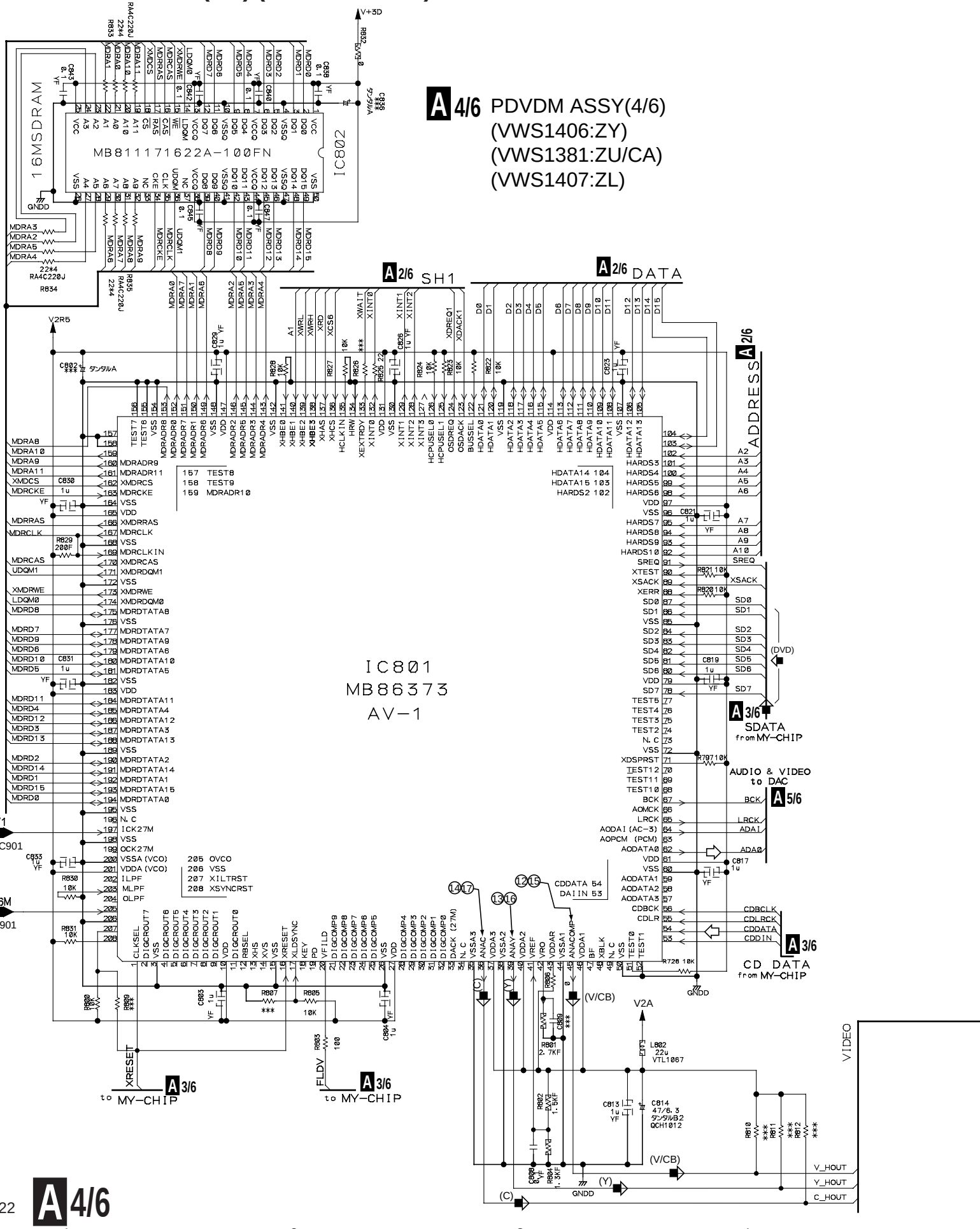
: The power supply is shown with the marked box.

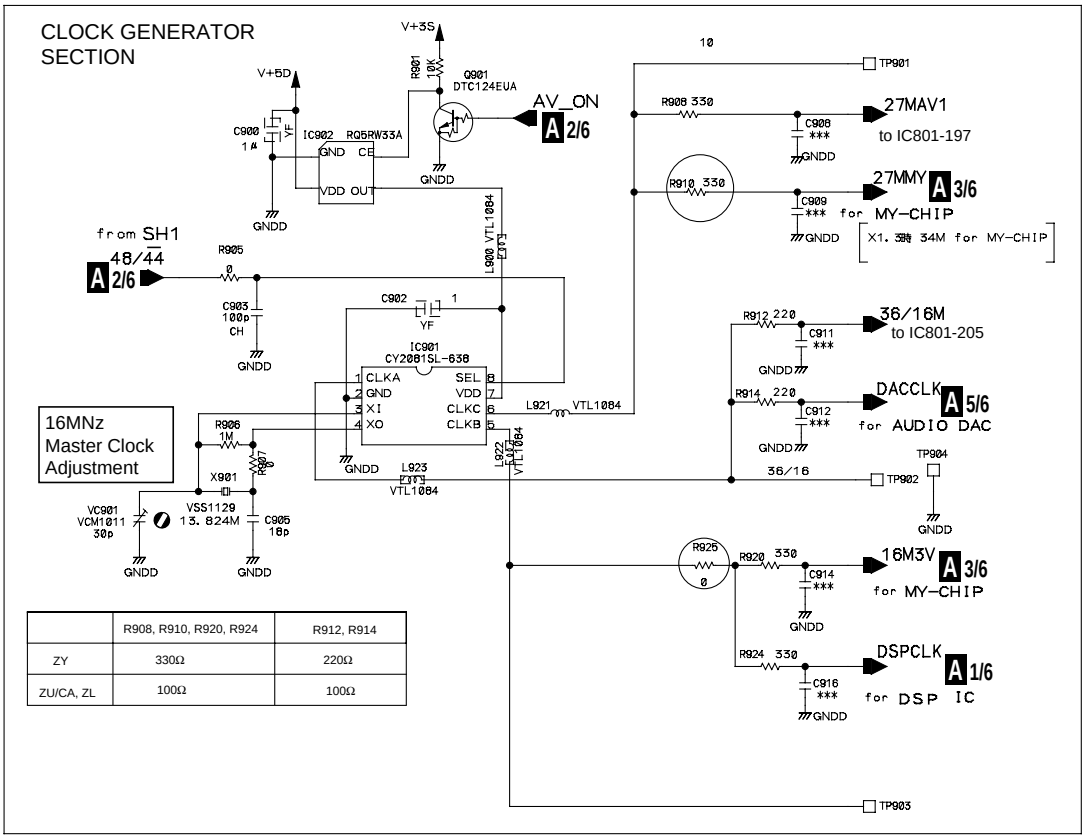
3.5 PDVDM ASSY (3/6) (MY-CHIP SECTION)



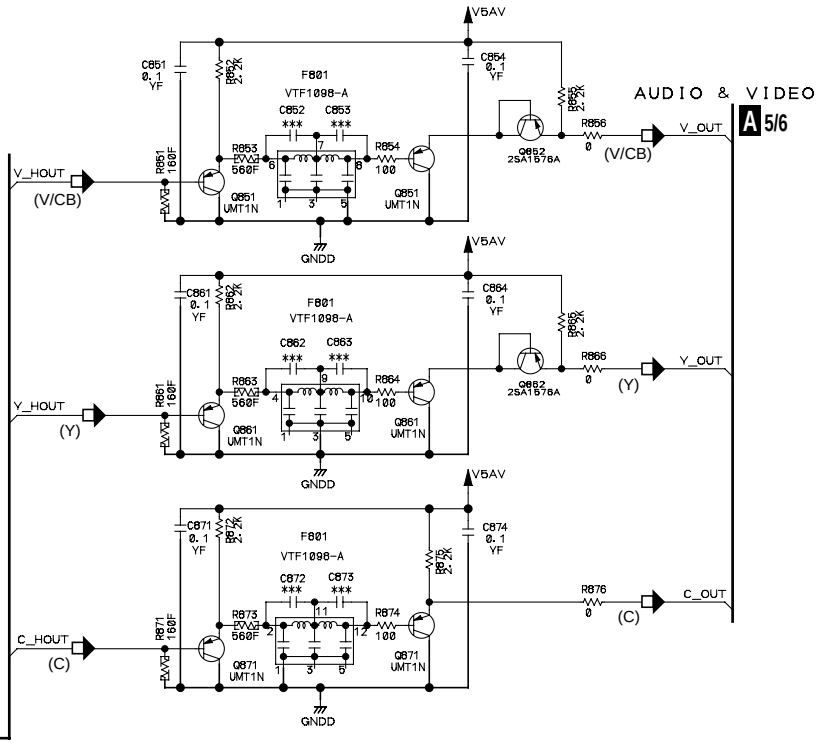

: RF SIGNAL ROUTE
: AUDIO SIGNAL ROUTE
: ROM DATA SIGNAL ROUTE
IC610
PD4995A
(MY CHIP)
from AV-1
to DAC
27MMY
SQUEEZ
LETTER
EFLG
FSX
DEFOUT
from DSP
to DSP
DUTY50
AFC
ATC
APC
ASC
from VCO
VCOCLK
from PLL&RF
VRC
AIN
(DVD)
XRESET
FG
PPWM
VPWM
FPWM
RPWM
From SH1
A12
A13
A14
A15
A16
ROMCK
DOUT
C2F
SFSY
SBSY
PW
V+3D
GNDD
GNDS

3.6 PDVDM ASSY (4/6) (AV1 SECTION)





	R908, R910, R920, R924	R912, R914
ZY	330Ω	220Ω
ZU/CA, ZL	100Ω	100Ω

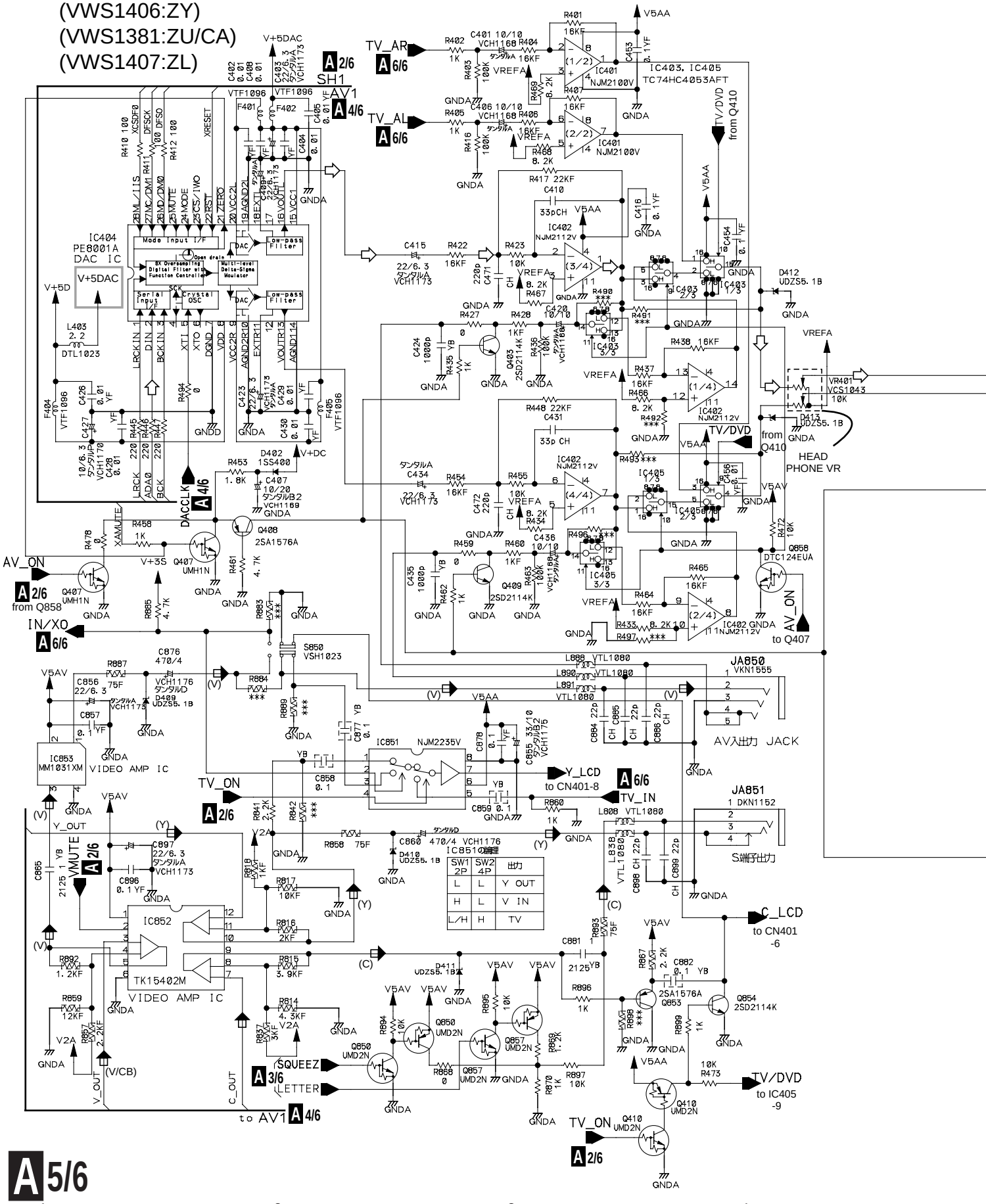


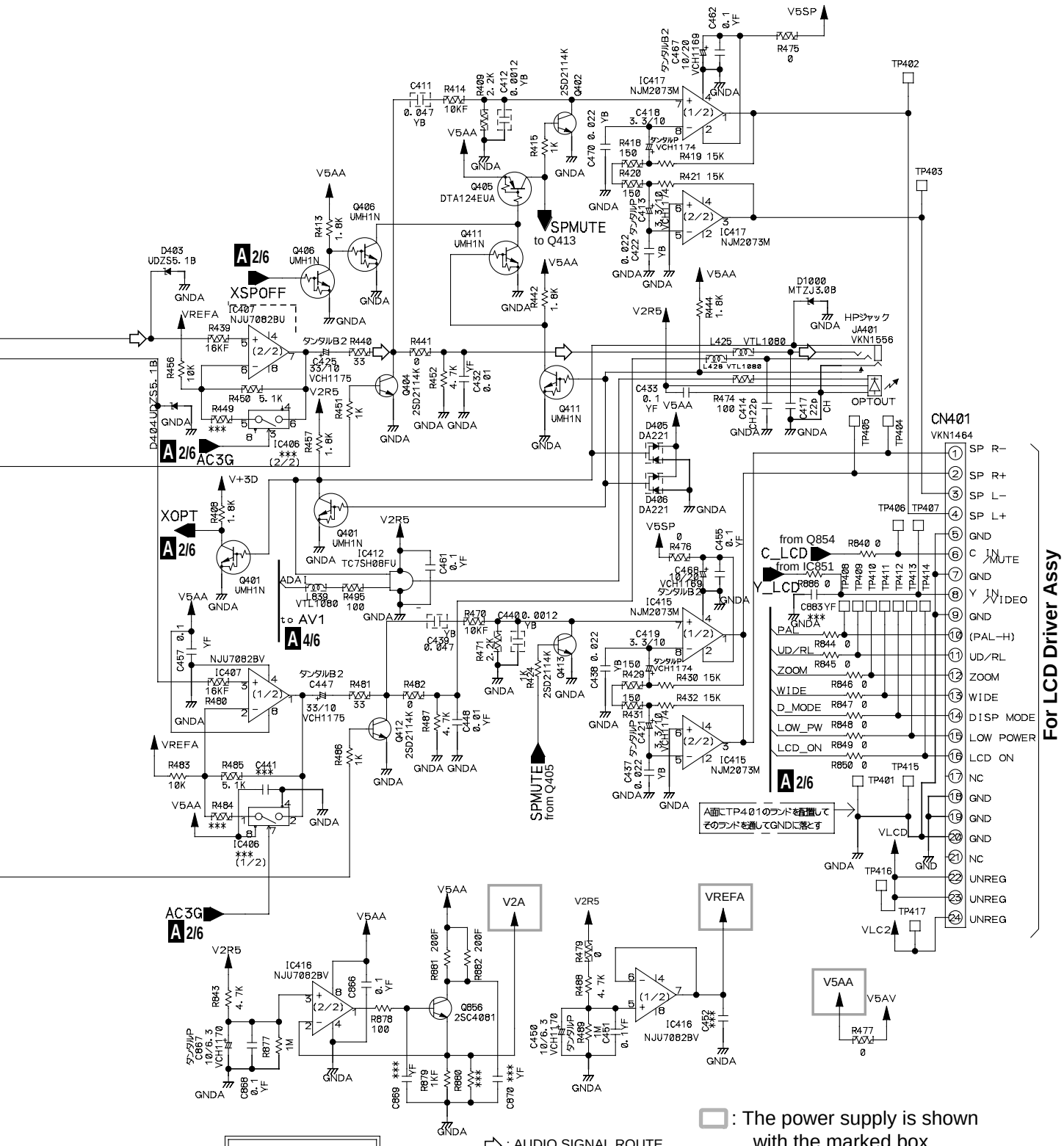
: AUDIO SIGNAL ROUTE
: ROM DATA SIGNAL ROUTE
(V/CB) : V/CB SIGNAL ROUTE
(Y) : Y SIGNAL ROUTE
(C) : C SIGNAL ROUTE

: The power supply is shown with the marked box.

3.7 PDVDM ASSY (5/6) (ANALOG AV SECTION)

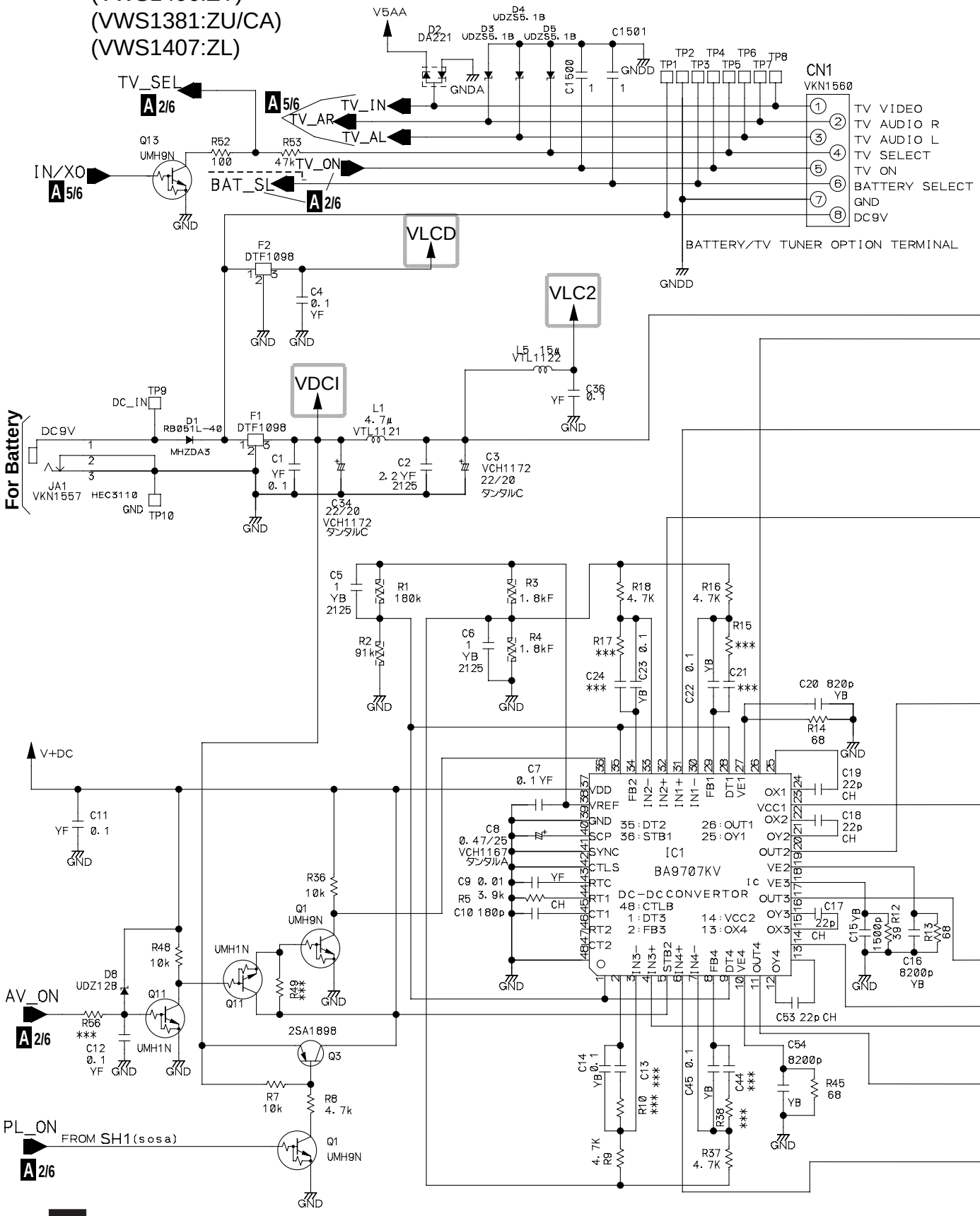
A 5/6 PDVDM ASSY(5/6)
(VWS1406:ZY)
(VWS1381:ZU/CA)
(VWS1407:ZL)



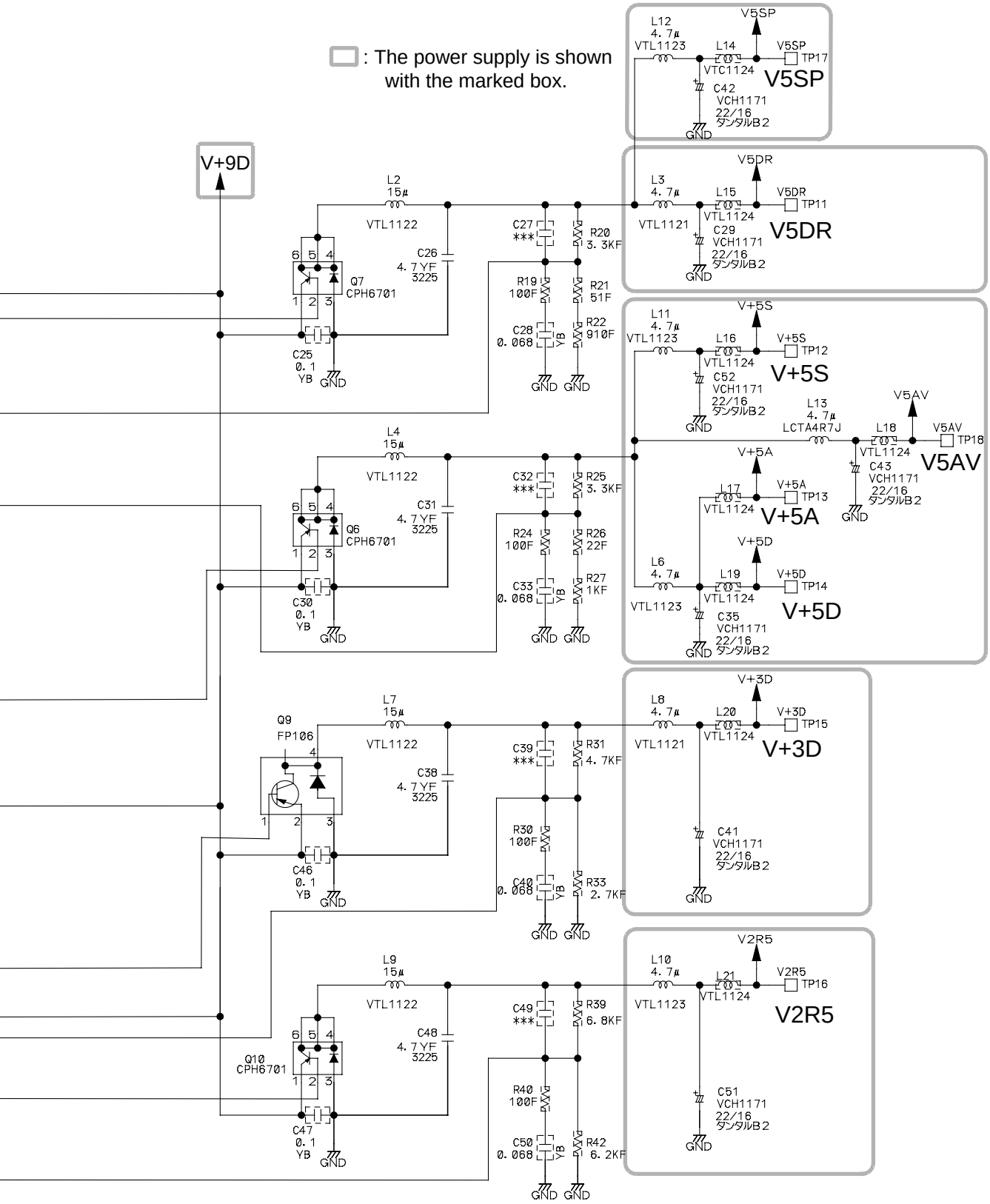

CN401
VKN1464
SP R−
SP R+
SP L−
SP L+
GND
C IN /MUTE
GND
Y IN /VIDEO
GND
(PAL−H)
UD/RL
ZOOM
WIDE
DISP MODE
LOW POWER
LCD ON
NC
GND
GND
GND
NC
UNREG
UNREG
UNREG
For LCD Driver Assy
XSPOFF
SPMUTE
to Q413
SPMUTE
from Q405
XOPT
AC3G
V+3D
V5AA
V2R5
V5SP
VREFA
V2A
VREFA
V5AV
from Q854
C_LCD
from IC851
Y_LCD
to AV1
A 2/6
A 4/6
A 5/6
A面にTP401のランドを経由して
そのランドを通してGNDに落とす
: The power supply is shown with the marked box.
: AUDIO SIGNAL ROUTE
: ROM DATA SIGNAL ROUTE
(V/CB) : V/CB SIGNAL ROUTE
(Y) : Y SIGNAL ROUTE
(C) : C SIGNAL ROUTE
1608 SIZE R
1005 SIZE R
1608 SIZE C
1005 SIZE C

3.8 PDVDM ASSY (6/6) (POWER SUPPLY SECTION)

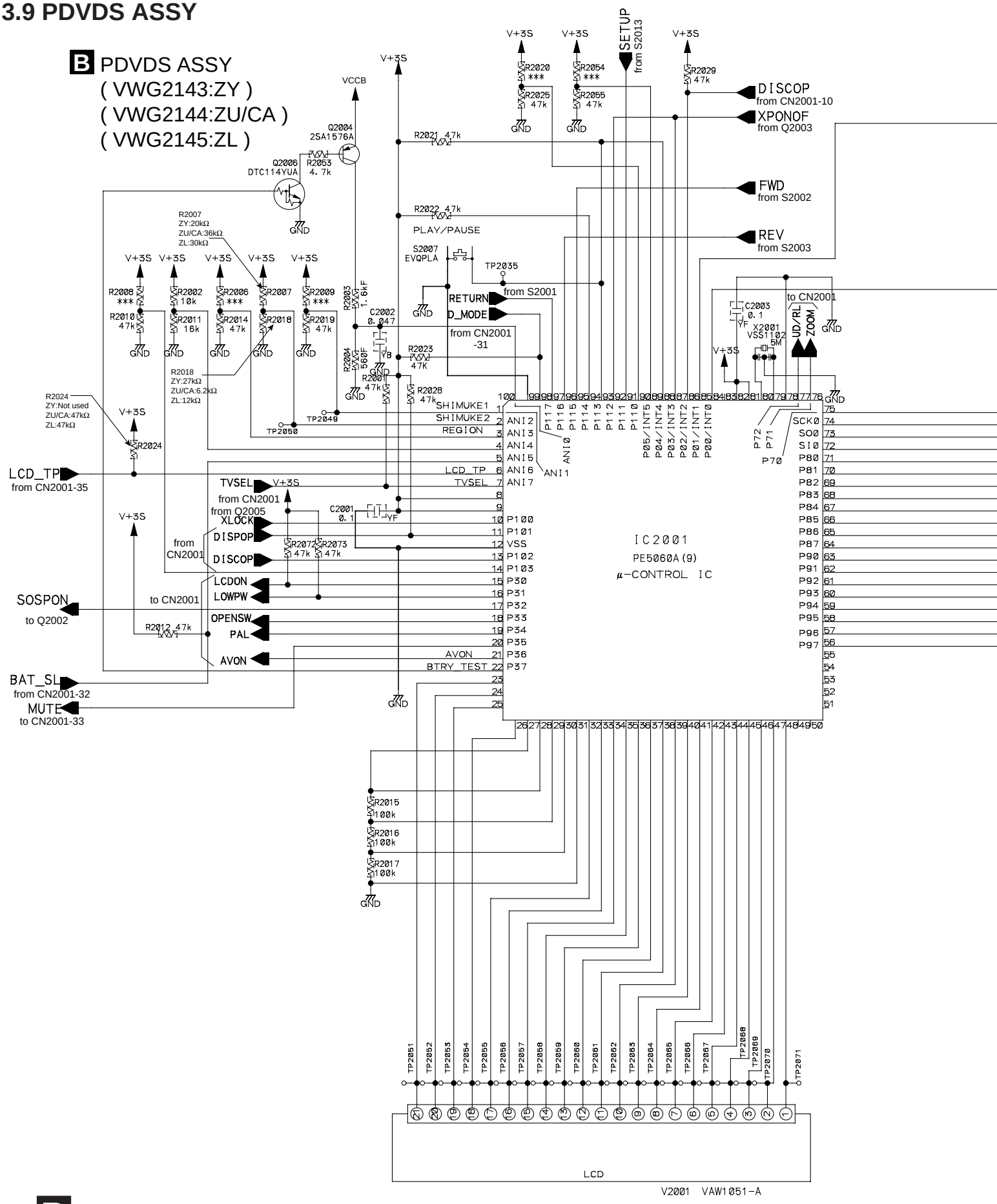
A 6/6 PDVDM ASSY(6/6)
(VWS1406:ZY)
(VWS1381:ZU/CA)
(VWS1407:ZL)



: The power supply is shown with the marked box.

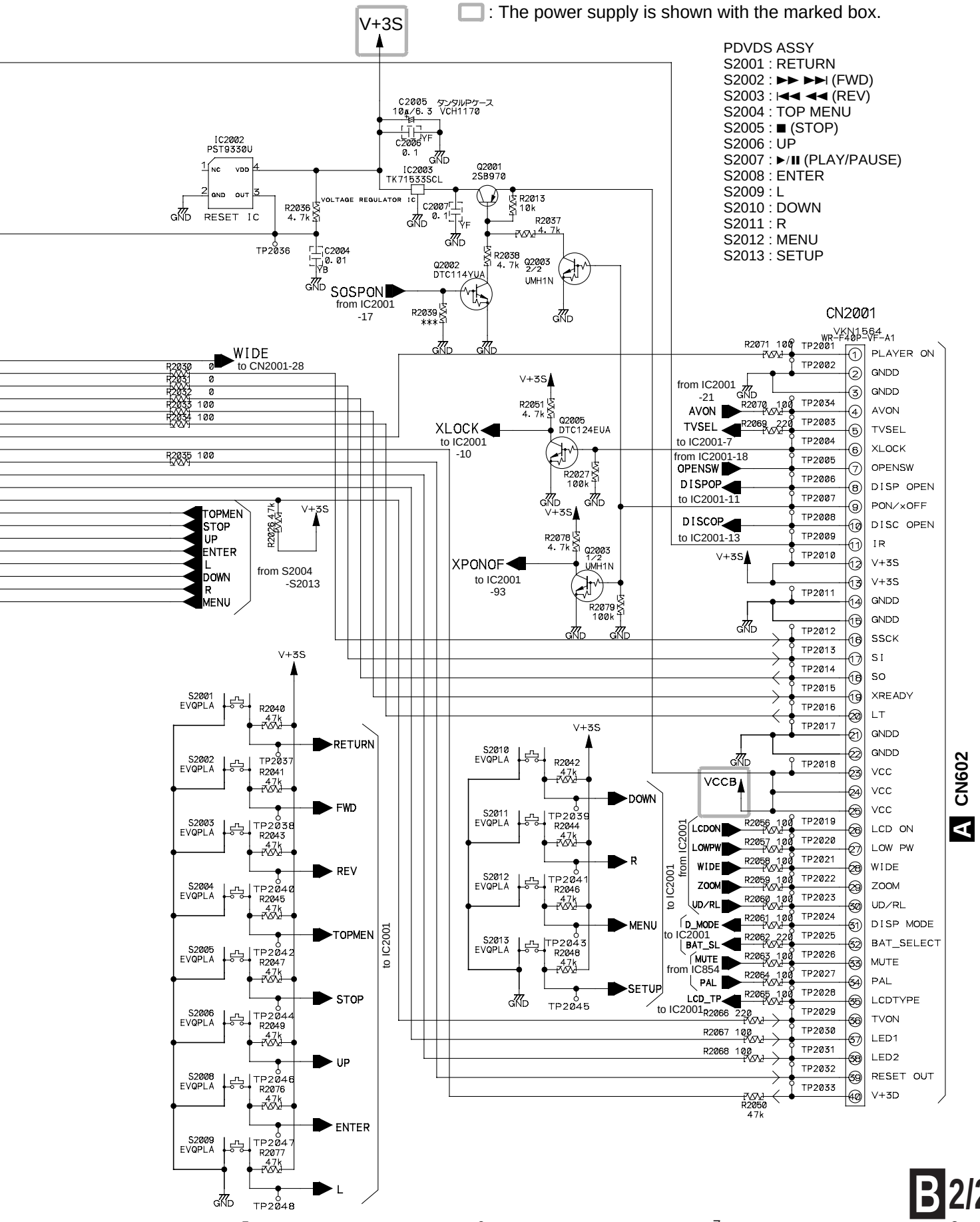


3.9 PDVDS ASSY



: The power supply is shown with the marked box.

PDVDS ASSY
S2001 : RETURN
S2002 : ▶▶ ▶▶I (FWD)
S2003 : I◀◀ ◀◀ (REV)
S2004 : TOP MENU
S2005 : ■ (STOP)
S2006 : UP
S2007 : ▶/II (PLAY/PAUSE)
S2008 : ENTER
S2009 : L
S2010 : DOWN
S2011 : R
S2012 : MENU
S2013 : SETUP

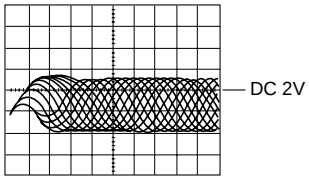


■ WAVEFORMS (PDVM ASSY)

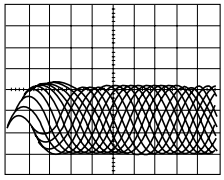
Note : The encircled numbers denote measuring point in the schematic diagram.

Measurement condition : No. 1 to 4 and 6 to 11 : Disc MA1, Title 1-chp 1
No. 5 : CD, ABEX-784 Track 1
No. 12 to 14 : MJK1, Title 1-chp 4
No. 15 to 17 : MJK1, Title 1-chp 5

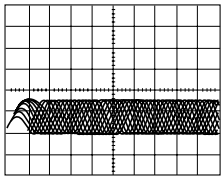
1 Q109-Emitter (RF)
V: 100mV/div. H: 0.1µS/div.



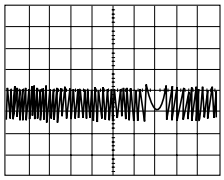
2 TP (RFO)
V: 500mV/div. H: 0.1µS/div.



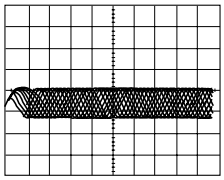
3 IC610-pin 170 (A IN)
V: 1V/div. H: 0.2µS/div.



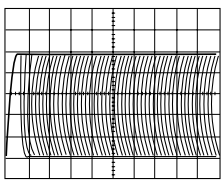
4 TP (Tracking Error)
V: 1V/div. H: 2mS/div.



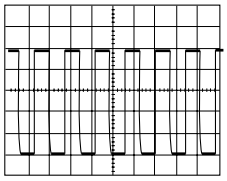
5 IC201-pin 39 (EFM before slice)
V: 1V/div. H: 1µS/div.



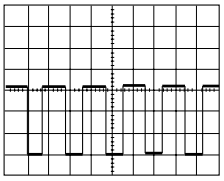
6 IC201-pin 1 (EFM)
V: 1V/div. H: 0.2µS/div.



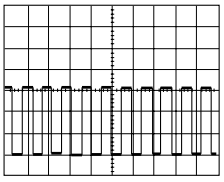
7 IC201-pin 55 (FG)
V: 1V/div. H: 5mS/div.



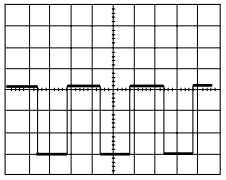
8 Foot of R261 (FPWM)
V: 1V/div. H: 10µS/div.



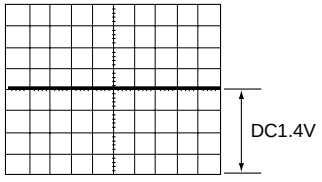
9 Foot of R262 (VPWM)
V: 1V/div. H: 10µS/div.



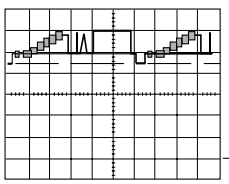
10 Foot of R263 (PPWM)
V: 1V/div. H: 0.2µS/div.



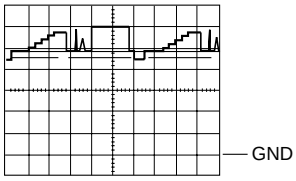
11 Foot of R264 (RPWM)



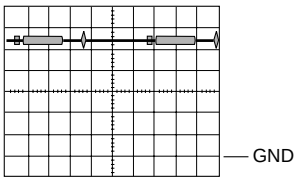
12 IC801-pin 45 (Composite video output)
V: 500mV/div. H: 10µS/div.



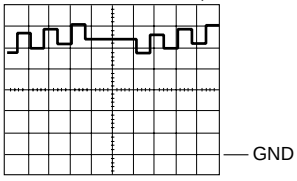
13 IC801-pin 39 (Y output)
V: 500mV/div. H: 10µS/div.



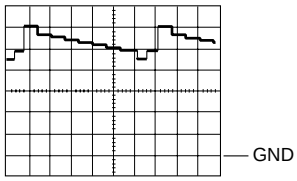
14 IC801-pin 36 (C output)
V: 500mV/div. H: 10µS/div.



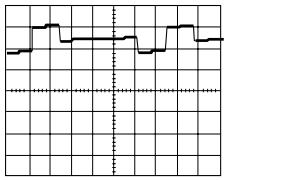
15 IC801-pin 45 (C_B output when selecting color difference output)
V: 500mV/div. H: 10µS/div.



16 IC801-pin 39 (Y output when selecting color difference output)
V: 500mV/div. H: 10µS/div.



17 IC801-pin 36 (C_R output when selecting color difference output)
V: 500mV/div. H: 10µS/div.



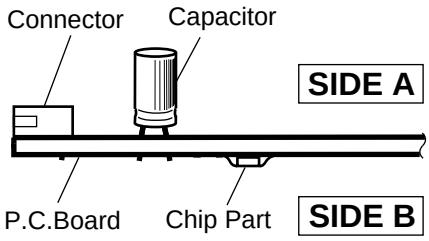
4. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

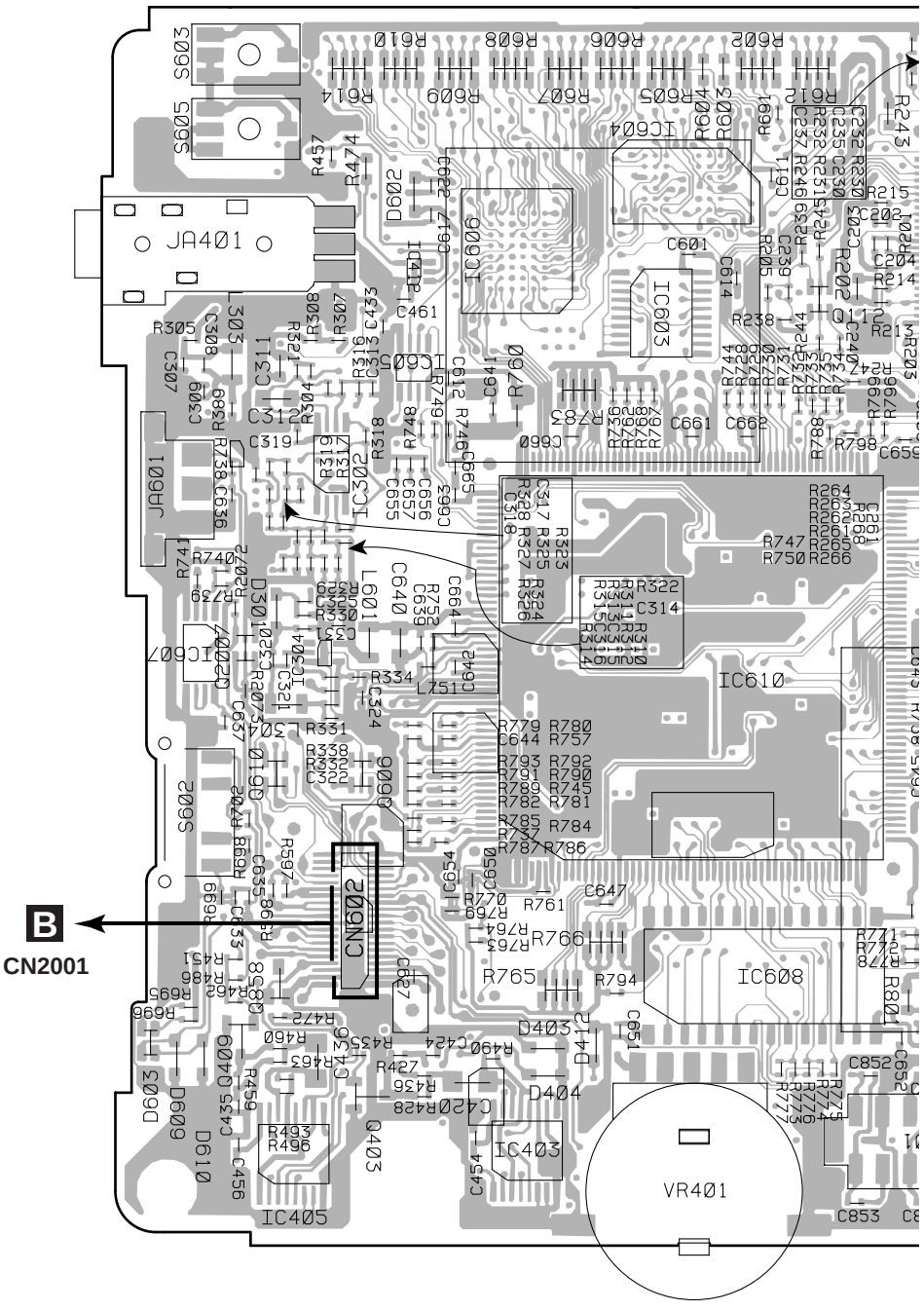
Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

3. The parts mounted on this PCB include all necessary parts for several destinations. For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.

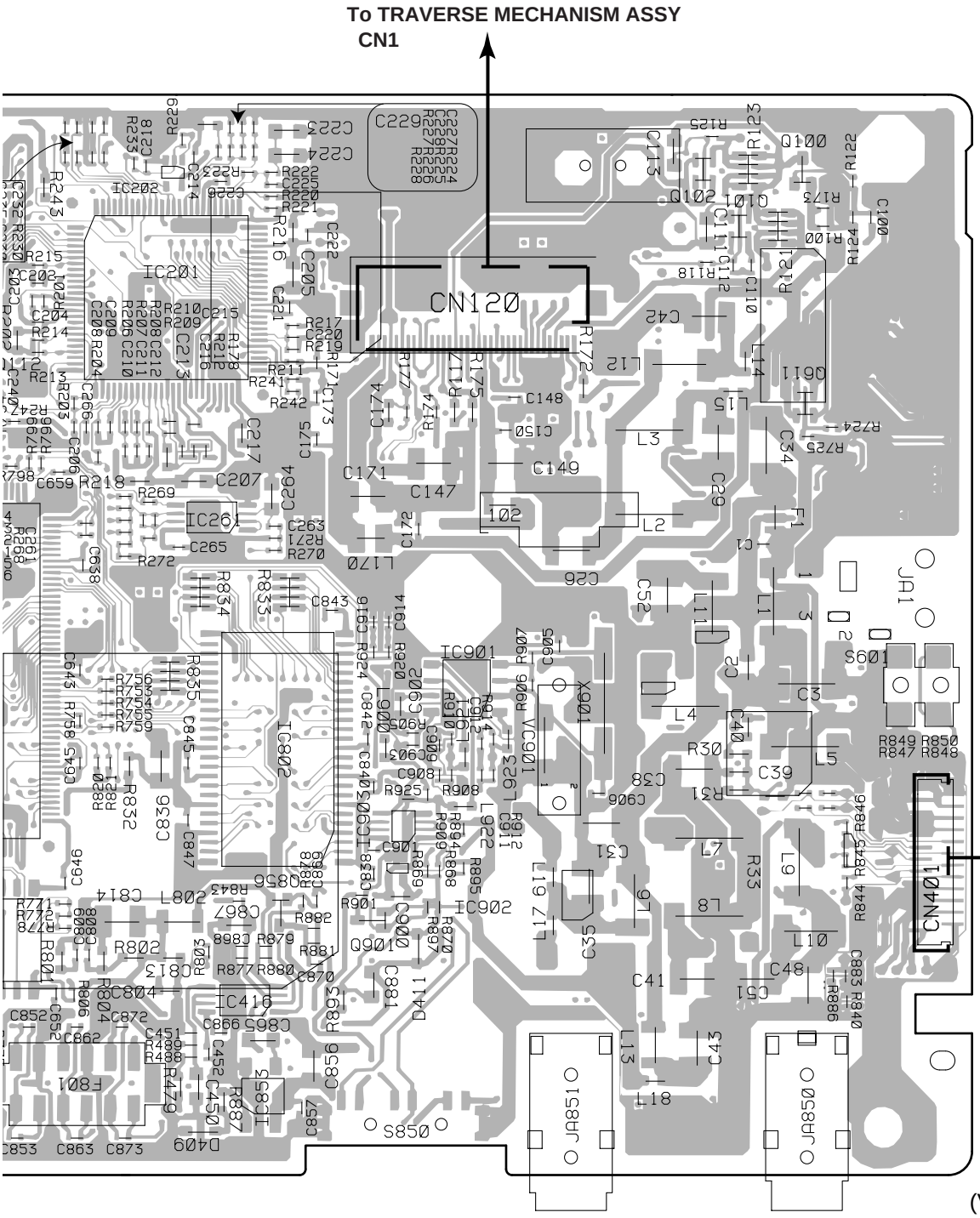


4.1 PDVDM ASSY

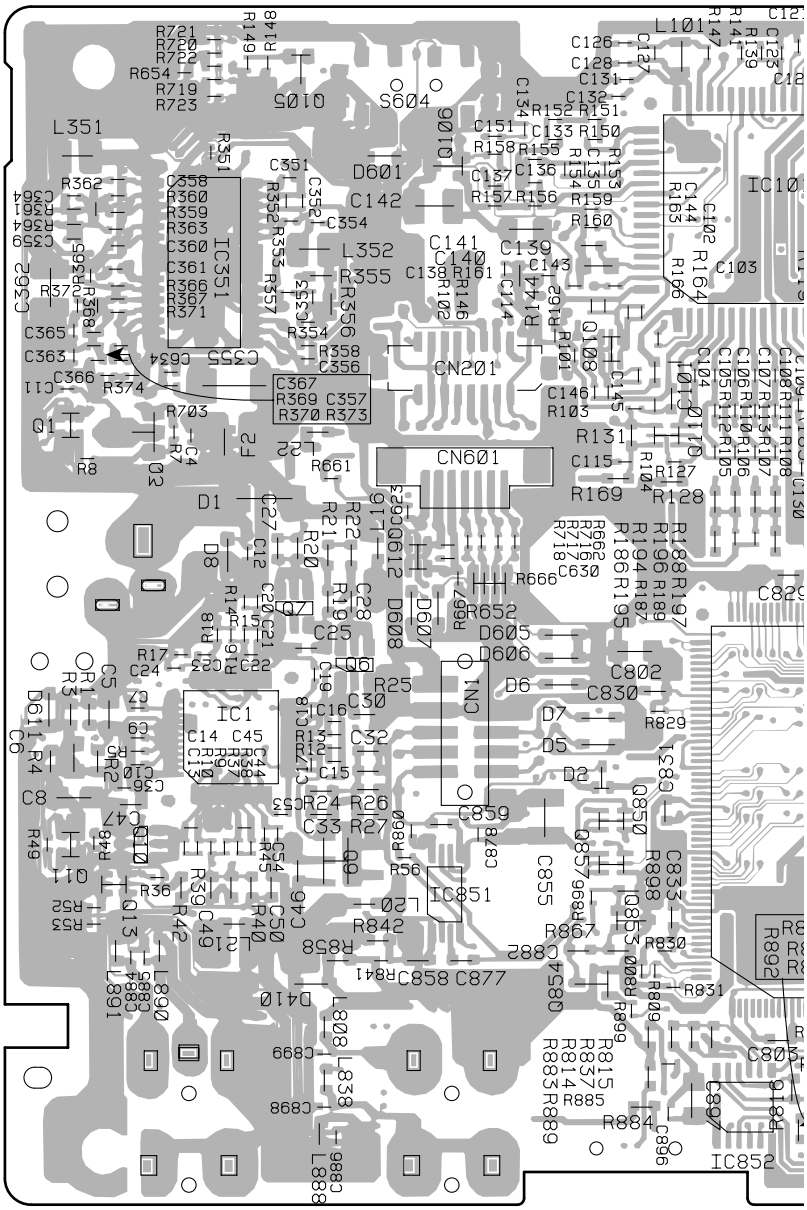
A PDVDM ASSY



• This PCB is a six-layered board.

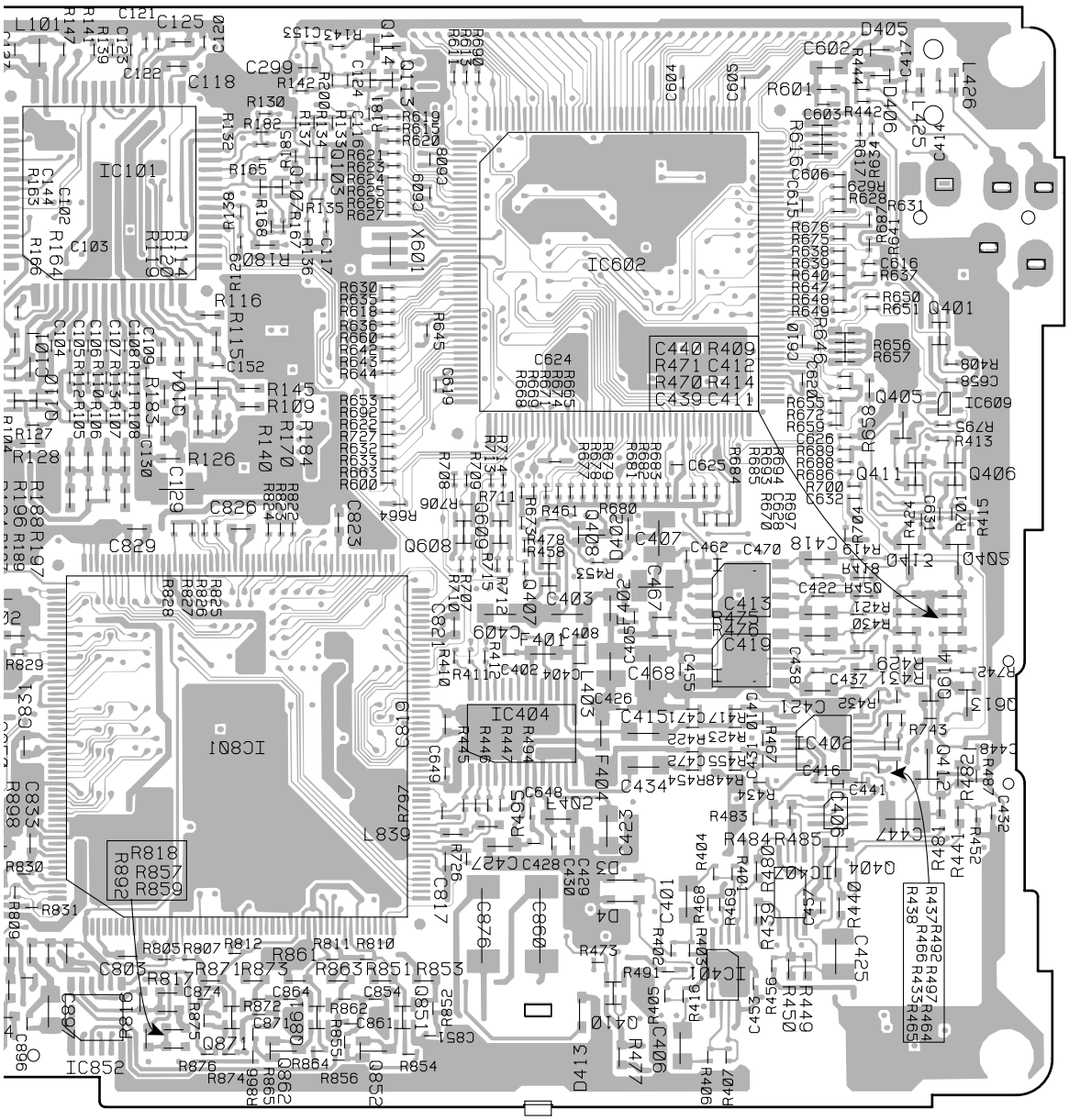


A PDVDM ASSY



Q1 Q2007 Q3 Q11 Q13 IC351 IC1 Q105 Q7 Q6 IC606 Q612 IC851 Q106 Q108 Q850 Q857 Q853 Q854 Q110 IC101 IC852

• This PCB is a six-layered board.



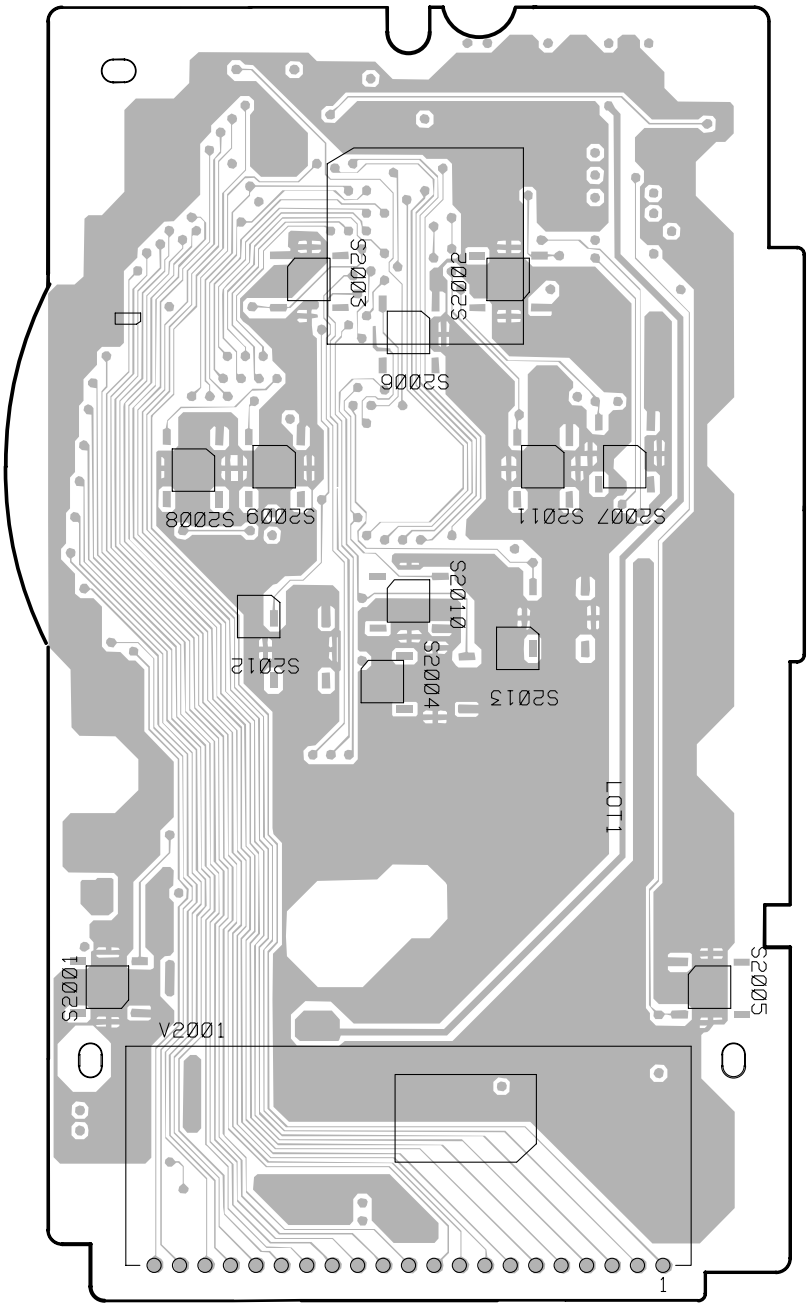
(VNP1701-C)

IC101 Q107 Q103 Q113 Q114 Q609 IC602 Q405 IC609 Q411 Q406 Q413 Q402 Q104 IC261 Q858 Q608 Q407 Q408 IC801 Q861 Q851 IC402 Q404 Q614 Q613 IC852 Q871 Q862 Q852 IC404 Q410 IC401 IC407 IC406 Q412

4.2 LPP UNIT

• This PCB is a four-layered board.

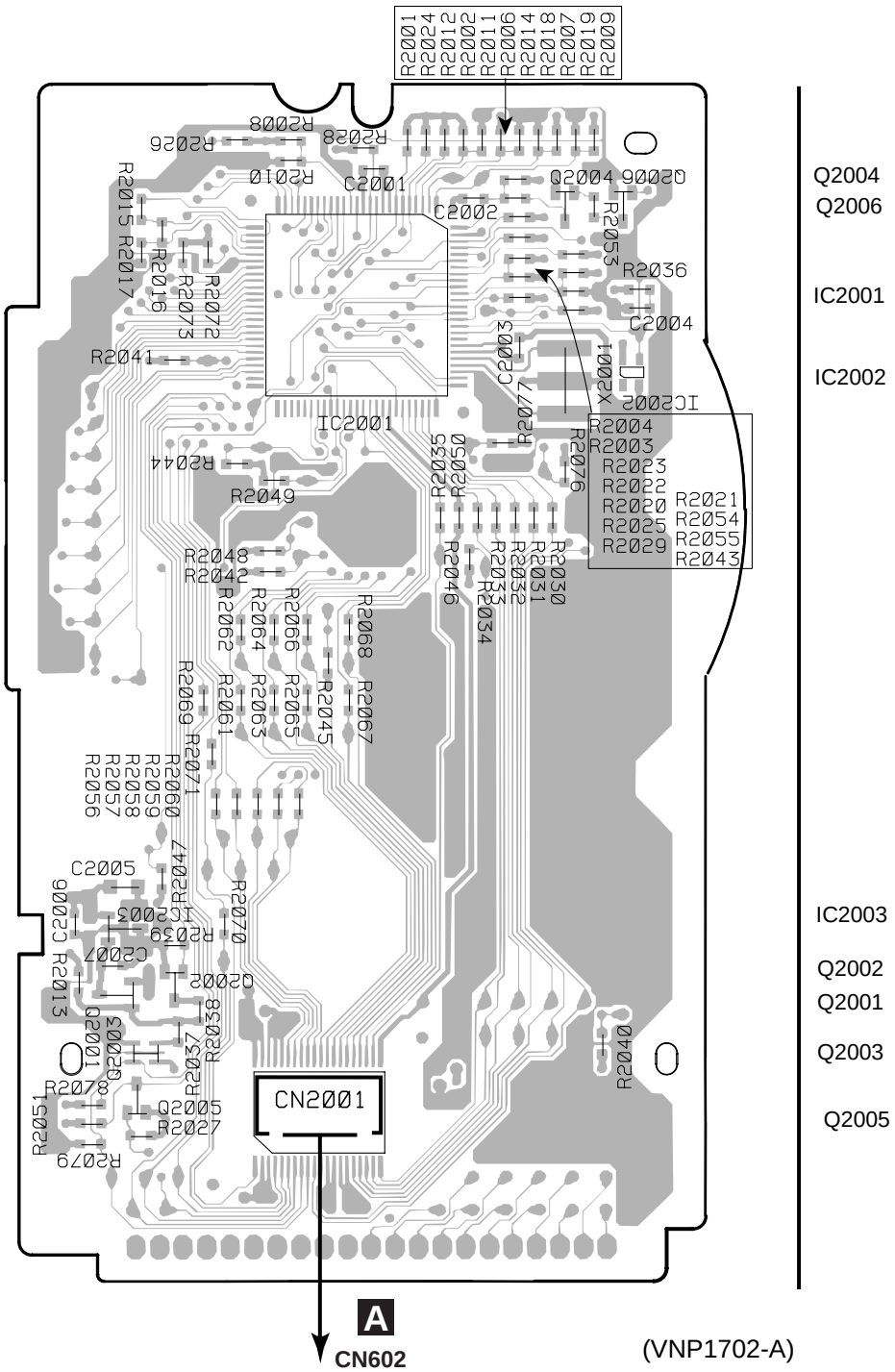
B PDVDS ASSY



(VNP1702-A)

• This PCB is a four-layered board.

B PDVDS ASSY



5. PCB PARTS LIST

NOTES: ●*Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
●*The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
●*When ordering resistors, first convert resistance values into code form as shown in the following examples.*
Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).
560 Ω → 56×10^1 → 561 ..... RD1/4PU 5 6 1 J
47k Ω → 47×10^3 → 473 ..... RD1/4PU 4 7 3 J
0.5 Ω → R50 ..... RN2H R 5 0 K
1 Ω → 1R0 ..... RS1P 1 R 0 K
Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).
5.62k Ω → 562×10^1 → 5621 ..... RN1/4PC 5 6 2 1 F

■ LIST OF WHOLE PCB ASSEMBLIES

Mark	Symbol and Description	Part No.			Remarks
		ZY Type	ZU/CA Type	ZL Type	
NSP	PDVDM ASSY	VWS1406	VWS1381	VWS1407	
NSP	PDVDS ASSY	VWG2143	VWG2144	VWG2145	

■ CONTRAST OF PCB ASSEMBLIES

A PDVDM ASSY

VWS1406, VWS1381 and VWS1407 are constructed the same except for the following:

Mark	Symbol and Description	Part No.			Remarks
		VWS1406	VWS1381	VWS1407	
	R334	RS1/16SS221J	RS1/16SS470J	RS1/16SS470J	
	R597	RS1/16SS203J	Not used	Not used	
	R598	RS1/16SS153J	Not used	Not used	
	R721	RS1/16SS0R0J	Not used	RS1/16SS0R0J	
	R723	RS1/16SS113J	Not used	RS1/16SS113J	
	R908, R910, R920, R924	RS1/16SS331J	RS1/16SS101J	RS1/16SS101J	
	R912, R914	RS1/16SS221J	RS1/16SS101J	RS1/16SS101J	
	R1000	Not used	RS1/16SS0R0J	RS1/16SS0R0J	
	S603	VSG1019	VSG1017	VSG1017	
	S604	VSH1024	Not used	VSH1024	
	S605	VSG1019	Not used	Not used	

B PDVDS ASSY

VWG2143, VWG2144 and VWG2145 are constructed the same except for the following:

Mark	Symbol and Description	Part No.			Remarks
		VWG2143	VWG2144	VWG2145	
	R2007	RS1/16SS203J	RS1/16SS363J	RS1/16SS303J	
	R2018	RS1/16SS273J	RS1/16SS622J	RS1/16SS123J	
	R2024	Not used	RS1/16SS473J	RS1/16SS473J	

Mark	No.	Description	Part No.

■ PCB PARTS LIST FOR PDV-LC10/ZY

A PDVDM ASSY

SEMICONDUCTORS

	IC351	BA5929FP
	IC1	BA9707KV
	IC901	CY2081SL-638
	IC608	KM48V2100CS-6
	IC101	LA9701M
	IC201	LC78652W
	IC802	MB811171622A-100FN
	IC801	MB86373
	IC853	MM1031XM
	IC415, IC417	NJM2073M
	IC261, IC302, IC401	NJM2100V
	IC402	NJM2112V
	IC851	NJM2235V
	IC607	NJM3414AV
	IC407, IC416	NJU7082BV
	IC602	PD3410A
	IC610	PD4995A
	IC606	PD6322D
	IC404	PE8001A
	IC902	RQ5RW33BA
	IC604	SRM20V100LLBX7
	IC403, IC405	TC74HC4053AFT
	IC603	TC74VHCT541AFT
	IC412	TC7SH08FU
	IC609	TC7SH32FU
	IC304	TC7SHU04FU
	IC605	TC7WH125FU
	IC852	TK15402M
	Q100, Q106, Q408, Q613	2SA1576A
	Q852, Q853, Q862	2SA1576A
	Q3	2SA1898
	Q105, Q114, Q856	2SC4081
	Q402– Q404, Q409, Q412, Q413	2SD2114K
	Q854	2SD2114K
⚠	Q10, Q6, Q7	CPH6701
	Q405	DTA124EUA
	Q614, Q858, Q901	DTC124EUA
⚠	Q9	FP106
	Q104, Q108	HN1K03FU
	Q410, Q850, Q857	UMD2N
	Q107, Q11, Q2007, Q401	UMH1N
	Q406, Q407, Q411, Q606	UMH1N
	Q611, Q612	UMH1N
	Q610	UMH4N
	Q1, Q13	UMH9N
	Q102, Q851, Q861, Q871	UMT1N
	Q101, Q112, Q113	UMX1N
	Q103, Q110, Q608, Q609	UMZ1N
	D1001, D1002	UMZ8.2T
	D402	1SS400
	D2, D405, D406	DA221
	D301	KV1471E
	D603	LT1ED67A
	D1	RB051L-40
	D602	RB501V-40
	D8	UDZ12B
	D3, D4, D403, D404	UDZS5.1B
	D409– D413, D5, D601	UDZS5.1B
	D605– D611	UDZS5.1B
	D1000	UDZS8.2B

COILS AND FILTERS

	F1, F2 (EMI FILTER)	DTF1098
	L403 (2R2)	DTL1023
	L170, L351, L352 (4R7)	DTL1024
	L13 (CHIP)	LCTA4R7J3225
	F401, F402, F404, F405	VTF1096
	F801 (Video Filter)	VTF1098
	L101, L102, L303, L601 (CHIP)	VTL1061
	L802	VTL1067
	L425, L426, L808, L838, L839	VTL1080
	L888, L890, L891 (BEADS)	VTL1080
	L900, L921– L923 (BEADS)	VTL1084
	L1, L3, L8 (INDUCTOR)	VTL1121
	L2, L4, L5, L7, L9 (INDUCTOR)	VTL1122
	L10– L12, L6 (CHIP COIL)	VTL1123
	L14– L21 (CHIP BEADS)	VTL1124
	L751 (CHIP BEADS)	VTL1126
	L304 (COIL 2.7U)	VTL1141

SWITCHES

	S601	QSG1003
	S603, S605	VSG1019
	S602	VSH1022
	S850	VSH1023
	S604	VSH1024

CAPACITORS

	C616	CCSSCH100D50
	C123, C145, C626, C903	CCSSCH101J50
	C322	CCSSCH120J50
	C206, C210, C211	CCSSCH151J50
	C126, C307, C905	CCSSCH180J50
	C10	CCSSCH181J25
	C116, C151, C17– C19, C314	CCSSCH220J50
	C414, C417, C53, C884– C886	CCSSCH220J50
	C898, C899	CCSSCH220J50
	C471, C472	CCSSCH221J25
	C410, C431	CCSSCH330J50
	C104– C108, C134, C218	CCSSCH470J50
	C128, C309	CCSSCH560J50
	C127, C308	CCSSCH5R0C50
	C146	CCSSCH680J50
	C124	CCSSCH820J50
	C140, C223, C224, C264, C312	CKSQYB105K10
	C5, C6, C865, C881, C1500, C1501	CKSQYB105K10
	C2	CKSQYF225Z16
	C101, C118, C125, C174, C213	CKSRYB104K16
	C25, C30, C311, C46, C47	CKSRYB104K16
	C858, C859, C877, C882	CKSRYB104K16
	C412, C440	CKSRYB122K50
	C229	CKSRYB224K10
	C411, C439	CKSRYB473K16
	C28, C33, C40, C50	CKSRYB683K16
	C217, C803, C804, C813, C817	CKSRYF105Z10
	C819, C821, C823, C826	CKSRYF105Z10
	C829– C831, C833, C900, C902	CKSRYF105Z10

Mark	No.	Description	Part No.
	C299		CKSRYF474Z16
	C152, C216, C313, C325, C359		CKSSYB102K50
	C424, C435		CKSSYB102K50
	C133, C136, C203, C220, C225		CKSSYB103K16
	C239, C320, C321, C628, C650		CKSSYB103K16
	C659		CKSSYB103K16
	C102, C121, C138, C14, C212		CKSSYB104K10
	C22, C227, C228, C23, C232		CKSSYB104K10
	C263, C315– C317, C353, C45		CKSSYB104K10
	C637		CKSSYB104K10
	C15		CKSSYB152K50
	C173		CKSSYB222K50
	C266, C422, C437, C438		CKSSYB223K16
	C470		CKSSYB223K16
	C209, C352, C360		CKSSYB331K50
	C122, C208, C358, C364		CKSSYB471K50
	C237		CKSSYB472K25
	C117, C240		CKSSYB681K50
	C261, C137		CKSSYB682K25
	C20		CKSSYB821K50
	C16, C54		CKSSYB822K16
	C402, C404, C405, C408, C426		CKSSYF103Z50
	C428– C430, C432, C448, C456		CKSSYF103Z50
	C9		CKSSYF103Z50
	C1, C109, C11, C110, C115		CKSSYF104Z16
	C12, C120, C130, C131, C143		CKSSYF104Z16
	C148, C150, C172, C175, C202		CKSSYF104Z16
	C204, C215, C221, C222, C226		CKSSYF104Z16
	C230, C235, C265, C319, C331		CKSSYF104Z16
	C351, C354, C36, C361, C4		CKSSYF104Z16
	C416, C433, C451, C453– C455		CKSSYF104Z16
	C457, C461, C462, C601		CKSSYF104Z16
	C603– C606, C608– C612		CKSSYF104Z16
	C614, C615, C617, C619, C620		CKSSYF104Z16
	C622– C625, C627, C630, C636		CKSSYF104Z16
	C638, C639, C641– C649		CKSSYF104Z16
	C651, C652, C654– C658		CKSSYF104Z16
	C660– C665, C7, C808, C838		CKSSYF104Z16
	C840, C842, C843, C845, C847		CKSSYF104Z16
	C851, C854, C857, C861, C864		CKSSYF104Z16
	C866, C868, C871, C874, C878		CKSSYF104Z16
	C896		CKSSYF104Z16
	C129, C142, C147, C149, C171		QCH1012
	C362, C814 (47µF/6.3V)		QCH1012
	C8 (0.47µF/25V)		VCH1167
	C401, C406, C420, C436 (10µF/10V)		VCH1168
	C407, C467, C468 (10µF/20V)		VCH1169
	C111, C113, C207, C427, C450		VCH1170
	C640, C867 (10µF/6.3V)		VCH1170
	C29, C35, C41– C43		VCH1171
	C51, C52 (22µF/16V)		VCH1171
	C3, C34, C355 (22µF/20V)		VCH1172
	C139, C403, C409, C415, C423		VCH1173
	C434, C856, C897 (22µF/6.3V)		VCH1173
	C413, C418, C419, C421 (3.3µF/10V)		VCH1174
	C425, C447, C855 (33µF/10V)		VCH1175
	C860, C876 (470µF/4V)		VCH1176
	C153 (SSYB 333)		VCH1184
	C26, C31, C38, C48 (475)		VCH1185
	VC901 (CHIP CERAMIC 30pF)		VCM1011

Mark	No.	Description	Part No.
RESISTORS			
	R612, R646, R652, R765, R766		RA4C103J
	R783		RA4C103J
	R121, R602, R605– R610, R614		RA4C220J
	R616, R833– R835		RA4C220J
	R123		RA4C390J
	R19, R24, R30, R40		RS1/16S1000F
	R27, R818		RS1/16S1001F
	R414, R470, R817		RS1/16S1002F
	R892		RS1/16S1201F
	R859		RS1/16S1202F
	R804		RS1/16S1301F
	R802		RS1/16S1501F
	R851, R861, R871		RS1/16S1600F
	R439, R480		RS1/16S1602F
	R3, R4		RS1/16S1801F
	R816		RS1/16S2001F
	R857		RS1/16S2201F
	R26		RS1/16S22R0F
	R33, R801		RS1/16S2701F
	R837		RS1/16S2401F
	R20, R25		RS1/16S3301F
	R815		RS1/16S3901F
	R814		RS1/16S4301F
	R31		RS1/16S3601F
	R21		RS1/16S51R0F
	R164, R853, R863, R873		RS1/16S5600F
	R42		RS1/16S6201F
	R39		RS1/16S6801F
	R858, R887, R893		RS1/16S75R0F
	R22		RS1/16S9100F
	R428, R460, R879		RS1/16SS1001F
	R401, R404, R406, R407, R422		RS1/16SS1602F
	R437, R438, R454, R464, R465		RS1/16SS1602F
	R829, R881, R882		RS1/16SS2000F
	R417, R448		RS1/16SS2202F
	VR401 (10KΩ)		VCS1043
	Other Resistors		RS1/16S□□□J
OTHERS			
	X601 (CHIP RES. 20MHz)		DSS1110
	JA601 (Remoto Receiver Unit)		RS-150
	CN401 (FFC CONNECTOR 24P)		VKN1464
	CN602 (CONNECTOR 40P)		VKN1486
	CN1 (CONNECTOR)		VKN1560
	CN601 (FCC CONNECTOR 7P)		VKN1563
	CN201 (CONNECTOR 16P)		VKN1565
	CN120 (FCC CONNECTOR 35P)		VKN1568
	(Barcode Label)		VRW1773
	X901 (X TAL. 13.824MHz)		VSS1129

Mark	No.	Description	Part No.

B PDVDS ASSY

SEMICONDUCTORS

IC2001	PE5060A
IC2002	PST9330U
IC2003	TK71533SCL
Q2004	2SA1576A
Q2001	2SB970
Q2002, Q2006	DTC114YUA
Q2005	DTC124EUA
Q2003	UMH1N

SWITCHES

S2001- S2013	VSG1013

CAPACITORS

C2002	CKSRYB102K50
C2004	CKSRYB103K50
C2001, C2003, C2006, C2007	CKSRYF104Z16
C2005 (10µF/6.3V)	VCH1170

RESISTORS

R2003	RS1/16S1601F
R2004	RS1/16S5600F
Other Resistors	RS1/16S□□□J

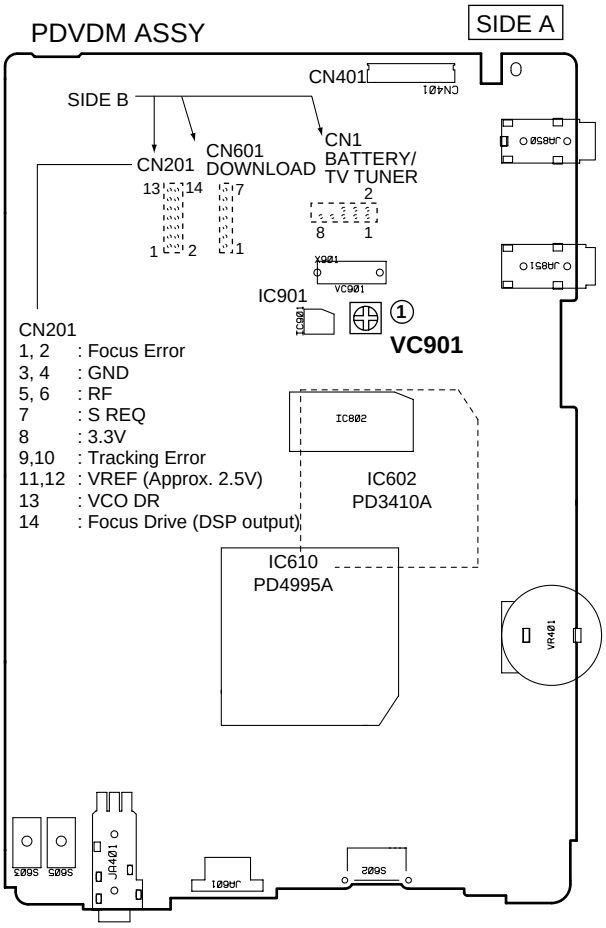
OTHERS

CN2001 (CONNECTOR 40P)	VKN1564
X2001 (CERAMIC RES. 5MHz)	VSS1102

6. ADJUSTMENT

6.1 ADJUSTMENT ITEMS AND LOCATION

■ **Adjustment Points (PCB Part)**

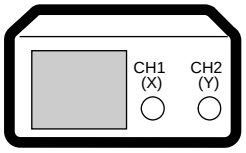
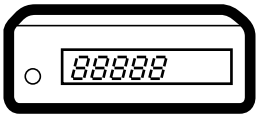


■ **Adjustment Items**

[Electrical Part]

① 16MHz Master Clock Adjustment

6.2 JIGS AND MEASURING INSTRUMENTS

 Dual-trace oscilloscope (with delay) Frequency band ≥ 40MHz	 Frequency counter Display digit ≥ 8-digit
⊖ Screwdriver (small)	

6.3 NECESSARY ADJUSTMENT POINTS

When

Adjustment Points

■ **EXCHANGE PCB ASSY**

Exchange board
PDVDM ASSY

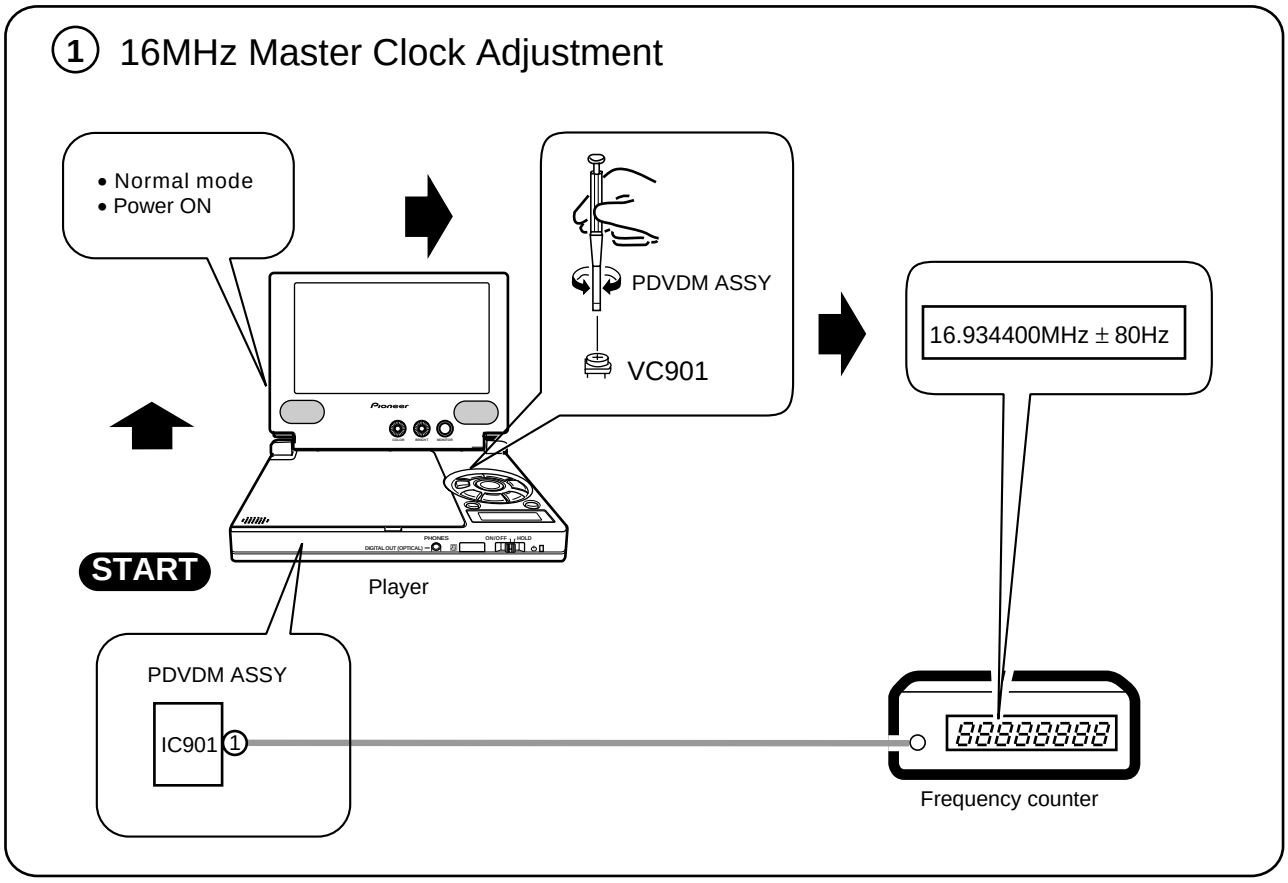
→

Mechanical point _____

Electric point _____

Note : ① is adjusted already.

6.4 ELECTRICAL ADJUSTMENT



7. GENERAL INFORMATION

7.1 DIAGNOSIS

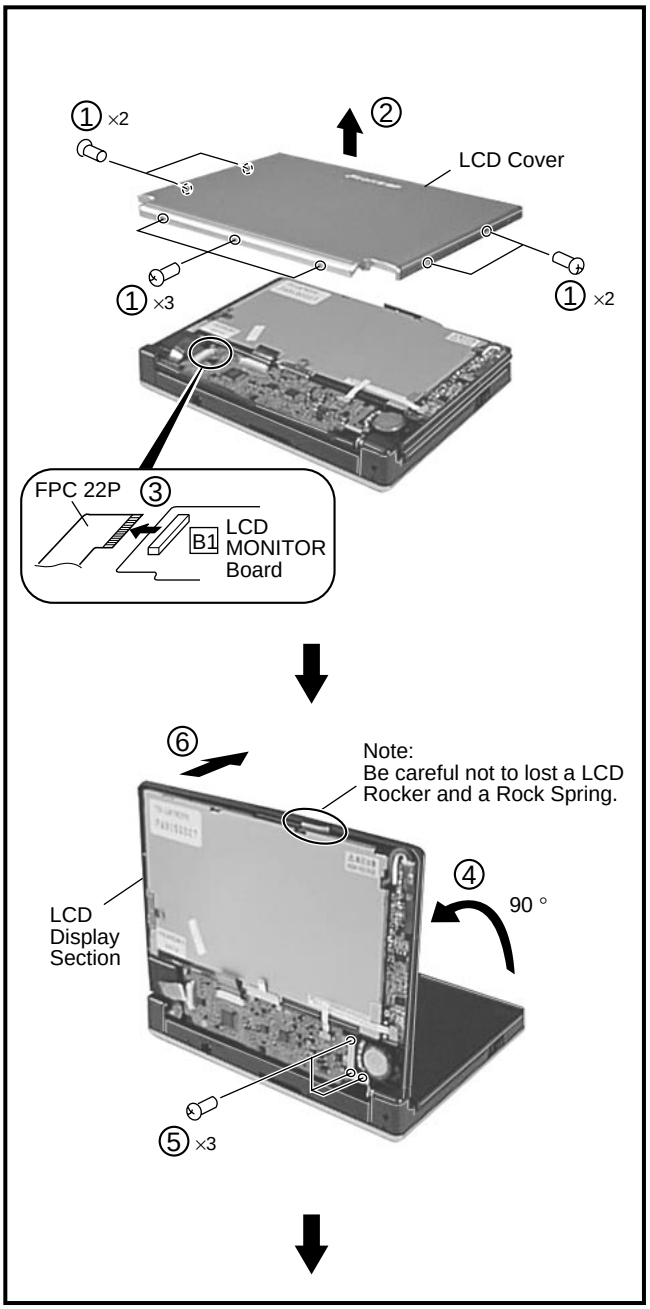
7.1.1 DISASSEMBLY/ASSEMBLY

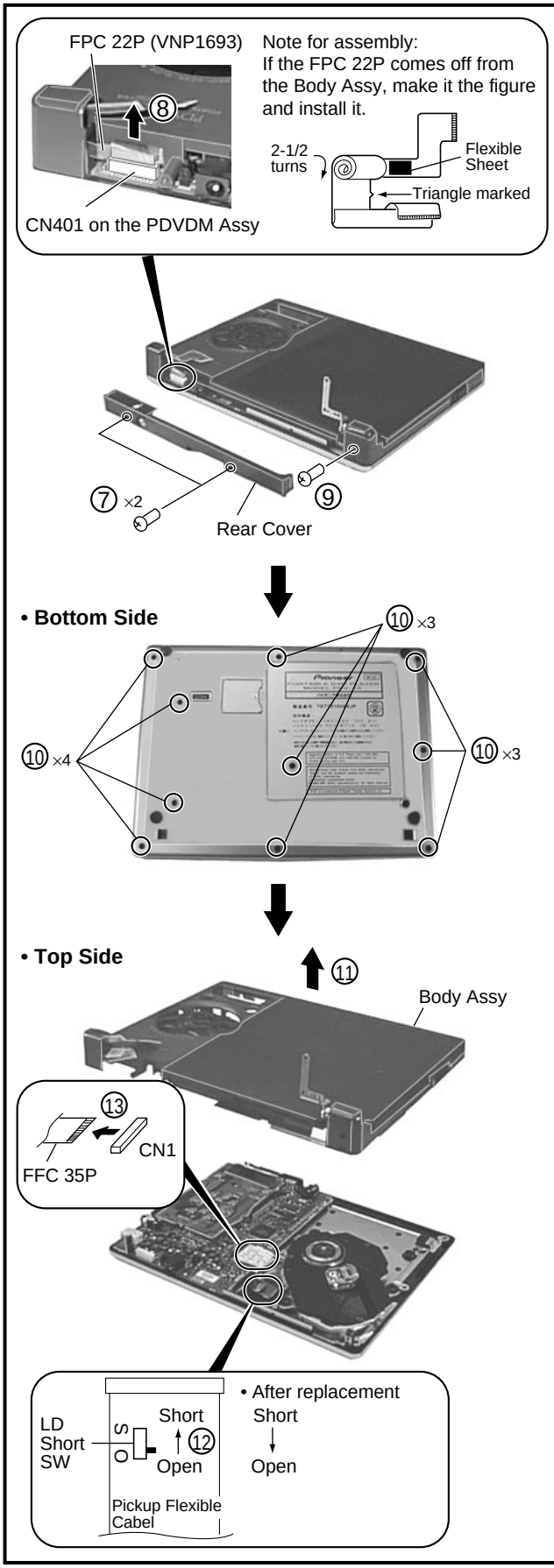
7.1.1.1 TRAVERSE MECHANISM ASSY

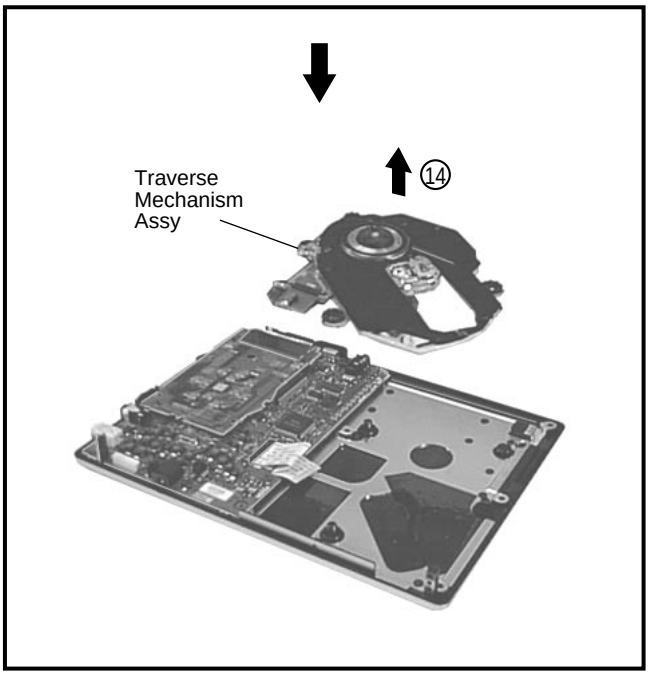
Disassembly : ① → ② → ③ → ④ → ⑤ → ⑥ → ⑦ → ⑧ → ⑨ → ⑩ → ⑪ → ⑫ → ⑬ → ⑭

Assembly : ⑭ → ⑬ → ⑫ → ⑪ → ⑩ → ⑨ → ⑧ → ⑦ → ⑥ → ⑤ → ④ → ③ → ② → ①

Note:
- Perform the work under the environment where the static electricity countermeasure was done because the laser diode of Pickup and so on may be broken down.







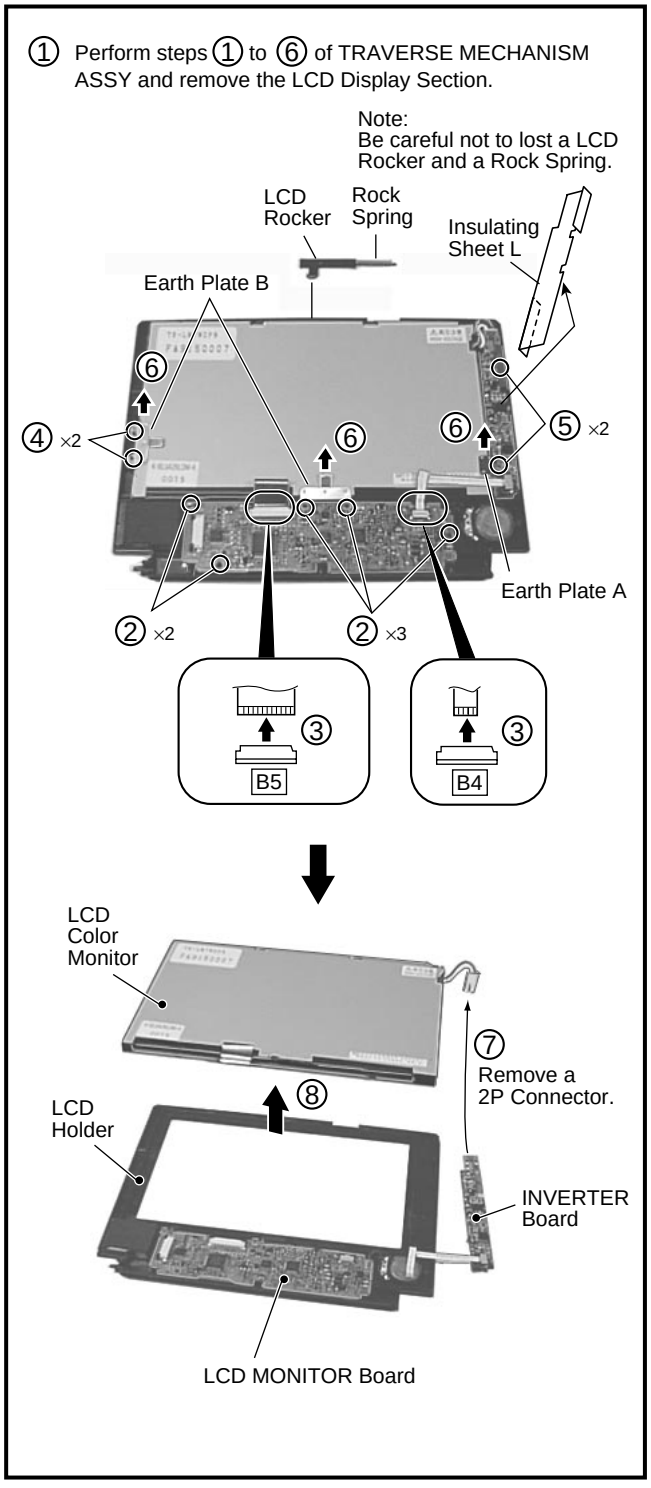
7.1.1.2 LCD DISPLAY SECTION

Disassembly :

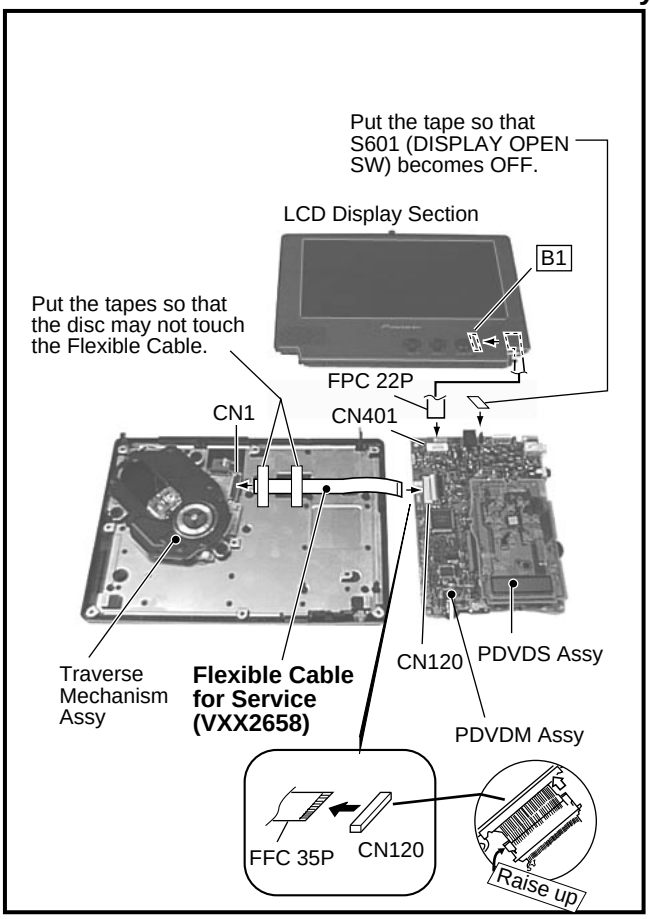
① → ② → ③ → ④ → ⑤ → ⑥ → ⑦ → ⑧

Assembly :

⑧ → ⑦ → ⑥ → ⑤ → ④ → ③ → ② → ①



● How to Check the Traverse Mechanism Assy

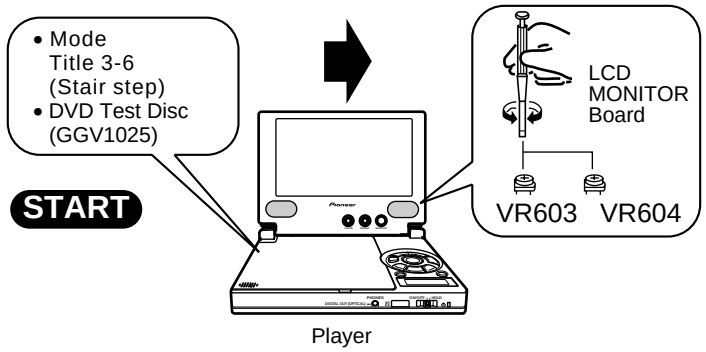


7.1.1.3 Confirmation After Replacing the LCD Display (Reference)

- The adjustment is unnecessary if there is no problem even if the test disc or general disc is played back after the LCD display panel is replaced.
  Perform the following adjustment and confirm if the screen seems to be dirty.

- The back light is necessary at the time of the adjustment. Adjust the "BRIGHT" and "COLOR" volumes in the center screen.

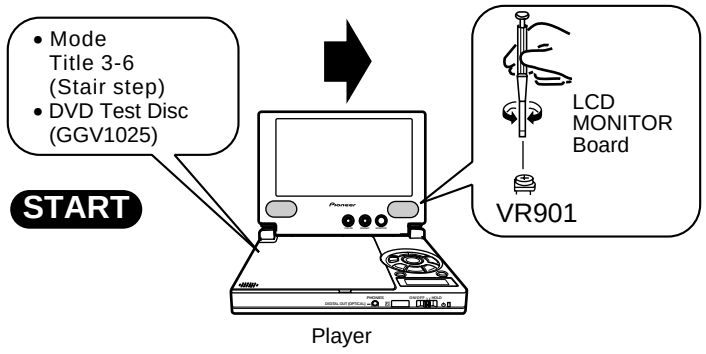
① White Balance Adjustment



• Purpose:
Set the white which becomes a standard for the color.

• Procedure:
1. Play the Title 3-6 of the DVD test disc.
2. Adjust VR603 (WB/R) and VR604 (WB/B) so that the whole of LCD screen becomes gray.
3. Adjust the pattern of the gray part of the screen become uniform when you adjust it by the visual observation.

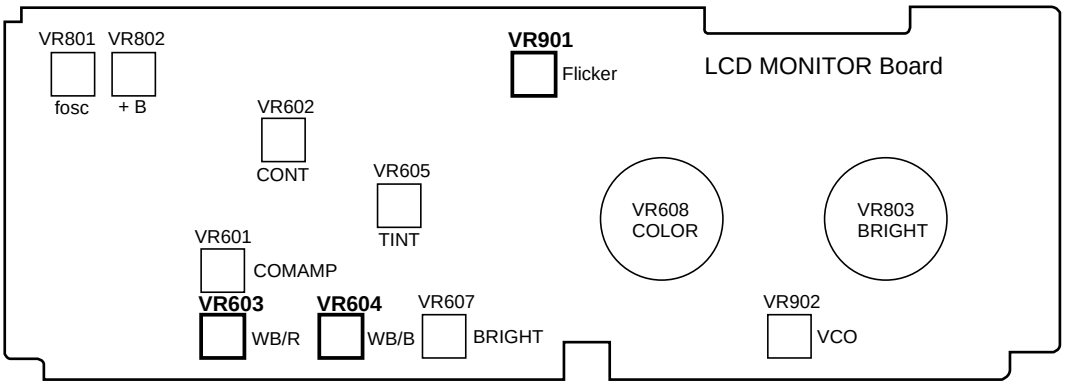
② Adjustment at Zoom Mode



• Purpose:
Prevent the horizontal line in Zoom from being conspicuous.

• Procedure:
1. Play the Title 3-6 of the DVD test disc.
2. Set the display mode to Zoom.
3. Adjust VR901 so that the horizontal line of LCD screen becomes minimum.
4. The horizontal line in the Zoom does not become 0.

● Adjustment Points

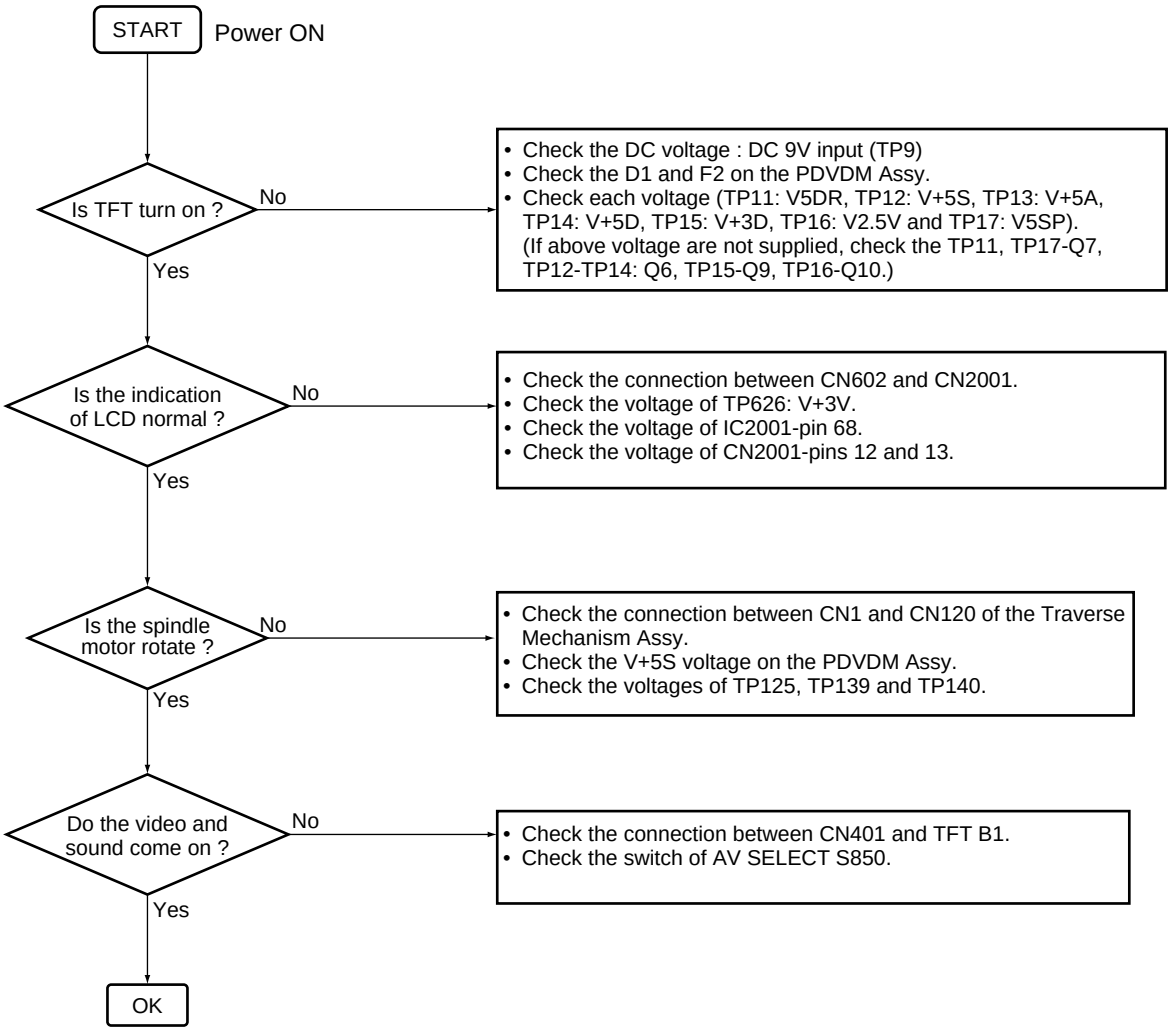


● Confirmation After the Adjustment

- Play the DVD test disc or general disc, then confirm the color is not abnormal.

7.1.2 TROUBLE SHOOTING

- No Power ON
- TFT is not turned ON
- LCD indication is unusual


START
Power ON
Is TFT turn on ?
No
Yes
• Check the DC voltage : DC 9V input (TP9)
• Check the D1 and F2 on the PDVDM Assy.
• Check each voltage (TP11: V5DR, TP12: V+5S, TP13: V+5A, TP14: V+5D, TP15: V+3D, TP16: V2.5V and TP17: V5SP). (If above voltage are not supplied, check the TP11, TP17-Q7, TP12-TP14: Q6, TP15-Q9, TP16-Q10.)
Is the indication of LCD normal ?
No
Yes
• Check the connection between CN602 and CN2001.
• Check the voltage of TP626: V+3V.
• Check the voltage of IC2001-pin 68.
• Check the voltage of CN2001-pins 12 and 13.
Is the spindle motor rotate ?
No
Yes
• Check the connection between CN1 and CN120 of the Traverse Mechanism Assy.
• Check the V+5S voltage on the PDVDM Assy.
• Check the voltages of TP125, TP139 and TP140.
Do the video and sound come on ?
No
Yes
• Check the connection between CN401 and TFT B1.
• Check the switch of AV SELECT S850.
OK

7.2 PARTS

7.2.1 IC

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

●List of IC

PE5060A, PD3410A, MB86373, LC78652W

■ PE5060A (PDVDS ASSY : IC2001)

• Sub-microcomputer

● Pin Function

No.	Pin Name	I/O	Pin Function
1	P11/ANI1	I	For destination distinction
2	P12/ANI2		
3	P13/ANI3	I	Not used
4	P14/ANI4	I	Indication level set of low battery
5	P15/ANI5	I	BAT SELECT: Power mode distinction
6	P16/ANI6	I	LCD TYPE: LCD monitor type distinction
7	P17/ANI7	I	TVSEL: TV mode distinction
8	AVDD	–	Analog power supply for A/D converter Connect to VDD.
9	AVREF	I	Reference voltage input of A/D converter Connect to VDD.
10	P100	I	Main key (XLOCK: Key Hold Low: Hold, High: Release)
11	P101	I	LCD monotor open/close SW (DISP OPEN: LCD monitor Close: Low , Open: High)
12	VSS	–	Ground
13	P102	I	Top cover open/close SW (DISC OPEN)
14	P103	I	Pull-down
15	P30/T00	O	LCD monitor control (LCD ON: LCD monitor screen High: ON, Low: OFF)
16	P31/T01	O	LCD monitor control (LOW PW: Low Power mode)
17	P32/T02	O	SOSPON: For applying the power to FL control
18	P33/TI1	O	FL control to system control (OPENSW: For Open detection)
19	P34/TI2	O	LCD monitor control (PAL)
20	P35/PCL	O	FL control to system control (MUTE)
21	P36/BUZ	O	FL control to system control (AVON)
22	P37	I	Battery voltage detection (Monitor the voltage with ANI0 at High)
23	COM0	O	Control port of LCD display window
24	COM1		
25	COM2		
26	COM3		
27	BIAS	–	Power supply for driving the LCD display window
28	VLCO		
29	VLC1		
30	VLC2		
31	VSS	–	Ground
32	S0	O	Control port of LCD display window
33	S1		
34	S2		
35	S3		
36	S4		
37	S5		
38	S6		
39	S7		
40	S8		
41	S9		
42	S10		
43	S11		
44	S12		
45	S13		
46	S14		
47	S15		

No.	Pin Name	I/O	Pin Function
48	S16	O	Control port of LCD display window
49	S17	O	Non connection
50	S18		
51	S19		
52	S20		
53	S21		
54	S22		
55	S23		
56	P97/S24	I	Main unit tact switch ON: L, OFF: H (MENU)
57	P96/S25	I	Main unit tact switch ON: L, OFF: H (R)
58	P95/S26	I	Main unit tact switch ON: L, OFF: H (DOWN)
59	P94/S27	I	Main unit tact switch ON: L, OFF: H (L)
60	P93/S28	I	Main unit tact switch ON: L, OFF: H (ENTER)
61	P92/S29	I	Main unit tact switch ON: L, OFF: H (UP)
62	P91/S30	I	Main unit tact switch ON: L, OFF: H (RETURN)
63	P90/S31	I	Main unit tact switch ON: L, OFF: H (TOPMEN)
64	P87/S32	I	TV tuner control (TVON: High at TV tuner mode)
65	P86/S33	I	LED1: Green
66	P85/S34	I	LED2: Red
67	P84/S35	I	FL control to system control (RESET OUT)
68	P83/S36	I	V+3V
69	P82/S37	I	FL control to system control (PLAYER ON: For power supply of the system control)
70	P81/S38	I	System control to FL control for communication (LT: Latch)
71	P80/S39	I	FL control to system control for communication (XREADY: Communication permission with Low, prohibit with High)
72	P25/S10/SB0	I	System control to FL control for communication (SO)
73	P26/S00/SB1	I	FL control to system control for communication (SI)
74	P27/SCK0	O	FL control to system control for communication (SSCK: Clock for communication)
75	P70/SI2/RxD	I	LCD monitor control (WIDE: For LCD monitor mode definition (normal, wide, zoom))
76	P71/SO2/TxD	O	LCD monitor control (ZOOM: For LCD monitor mode definition (normal, wide, zoom))
77	P72/SCK2/ASCK	O	LCD monitor control (UD/RL: For LCD monitor mode definition (inversion))
78	IC(VPP)	–	Connect to VSS
79	X2	I	Connect a crystal for main system clock oscillation
80	X1	–	
81	VDD	–	Power supply voltage
82	XT1/P07	I	Power supply voltage
83	XT2	–	Non connection
84	RESET	I	System reset input
85	P00/INTP0/TI00	I/O	IR input
86	P01/INTP1/TI01	I	Top cover open/close SW (DISC OPEN)
87	P02/INTP2	I	XPONOF (For interruption (Power key of the main unit) ←at falling edge detection)
88	P03/INTP3	I	Tact switch of the main unit (For interruption (Play/Pause key of the main unit) ←at falling edge detection)
89	P04/INTP4	I	Pull down (Normally, Low)
90	P05/INTP5	I	Pull down (Reset for four seconds normally: Low) (High: Not reset)
91	P110	I	When tact switch of the main unit is ON: L, OFF: H (SETUP)
92	P111	I	XPONOF (Power key of the main unit (Falling edge detection))
93	P112	I	For Play/Pause key of the main unit
94	P113	I	For Test (pull up)
95	P114	I	When tact switch of the main unit is ON: L, OFF: H (FWD)
96	P115	I	When tact switch of the main unit is ON: L, OFF: H (REV)
97	P116	I	When tact switch of the main unit is ON: L, OFF: H (STOP)
98	P117	I	LCD monitor to FL control (LCD monitor mode switch)
99	AVSS	–	Ground of A/D converter Connect to VSS.
100	P10/ANI0	I	Port for power supplay voltage detection

■ PD3410A (PDVDM ASSY : IC602)

• **System Control IC**

● **Pin Function**

No.	Mark	Pin Name	I/O	Function
1	XCS3/XCASL	XCS3	O	PD4995A (MY CHIP) chip select signal output
2	GND	GND	–	GND
3	CK	HCPUCK	O	
4	VCC	V+3D	–	V+3D
5	PICLK	–	I/O	N.C.
6	PIDATA	–	I/O	N.C.
7	GND	GND	–	GND
8	PORTH0	XCSSP0	O	Not used
9	PORTH1	33MVH	O	Not used
10	PORTH2	36MVH	O	Not used
11	PORTH3	V_SEL2	O	Not used
12	VCC	V+3D	–	V+3D
13	PORTH4	SCTAON	O	Not used
14	PORTH5	27MVH	O	Not used
15	PORTH6	XCSSPD	O	Not used
16	PORTH7	XAUDRST/ VPOFF/ ECHO	O	Not used
17	GND	GND	–	GND
18	EXTAL	EXTAL	I	Connect a ceramic resonator
19	XTAL	XTAL	O	
20	VCC	V+3D	–	V+3D
21	PORTG0	XCSDF0	O	DAC chip select signal output
22	PORTG1	XCSDF1/ XCSDASP	O	Not used
23	PORTG2	XCSDF2/ DFRST1/ XMIC_ON	O	Not used
24	PORTG3	HIBSEL	O	Not used
25	PORTG4	LFEON/ DFRST0	O	Not used
26	GND	GND	–	GND
27	PORTG5	6CHMD/ XMAOFF	O	Not used
28	PORTG6	DTSMD/ XMRST/ XDASP	O	SW (Switch circuit)
29	PORTG7	XAMUTE/ XMUTM	O	Last stage mute signal output of the audio
30	PORTF0	44X48	O	DAC 44/48 FS switching signal output
31	PORTF1	XCPT	I	Optical digital out jack input detection
32	PORTF2	3DON/ XMMUTE/ 48X44	O	Not used
33	VCC	V+3D	–	V+3D
34	PORTF3	XCSADSP0/ SYNC1	O	Not used
35	PORTF4	XCSADSP1/ XAVS_RT/ DISC	O	Not used
36	PORTF5	XCSADSP2/ DPOS/ODD	O	Not used

No.	Mark	Pin Name	I/O	Function
37	PORTF6	XVQERST/ XANR	O	Not used
38	PORTF7	XCSVE/ XCSVQE	O	Not used
39	GND	GND	–	GND
40	AVSS	GND	–	GND
41	AVCC	V+3D	–	V+3D
42	OUTA_P	LODRV	O	Not used
43	VREF	V+3D	–	V+3D
44	OUTB_P	TEI	O	Tracking offset signal output
45	AVSS	GND	–	GND
46	AVSS	GND	–	GND
47	PORTE0	V_SEL	O	Not used
48	PORTE1	CDGM	I	Not used
49	PORTE2	OEM???	I	
50	PORTE3	FOFST1	I/O	Focus offset adjustment output 1
51	PORTE4	FOFST2	I/O	Focus offset adjustment output 2
52	PORTE5	XDFINH	I/O	Defect shunt signal output
53	PORTE6	DVD/XCD	O	DVD/CD switching signal output
54	PORTE7	LD1_ON	O	650 nm laser diode ON signal output
55	PORTD0	LD2_ON	O	780 nm laser diode ON signal output
56	VCC	V+3D	–	V+3D
57	PORTD1	DPD/TE	O	1 beam/3 beams switching signal output
58	PORTD2	AGOFF	O	AGC ON/OFF switching signal output of RF IC
59	PORTD3	XCD2X	O	Signal output for switching the double speed playback
60	PORTD4	OEICG	O	OEIC gain switching signal output
61	GND	GND	–	GND
62	PORTD5	XMON	O	Control output ON/OFF switching output of the spindle motor
63	PORTD6	XBCA	O	Not used
64	PORTD7	OPEN_SW/ X???RST	I	Mechanism connector
65	PORTJ0	XDRVMUT	O	Driver mute output
66	PORTJ1	DR/XLD	O	Not used
67	PORTJ2	XDSPRST	O	Not used
68	PORTJ3	MNJACK/ MC_MO	I	Not used
69	VCC	V+3D	–	V+3D
70	PORTJ4	TM_ENT	I	Test mode input
71	PORTJ5	XEXPE	O	Not used
72	PORTJ6	VSEL_SW	I	Not used
73	PORTJ7	DQSY	I	Not used
74	PB0/TIOCA2	XCBUSY	I	Command busy input
75	PB1/TIOCB2	XABUSY	I	Auto-sequence busy input
76	PB2/TIOCA3	XINT2/ XAVIRQ2	I	Interrupt input 2 (AV-1)
77	VCC	V+3D	–	V+3D
78	PB3/TIOCB3	LT1	O	Communication response signal output to the FL controller
79	PB4/TIOCA4	SBSY	I	Subcode block sync. input
80	XMTEST	–	I	V+3D
81	XCPUMD	–	I	V+3D
82	XRES	XRESET	I	Reset input

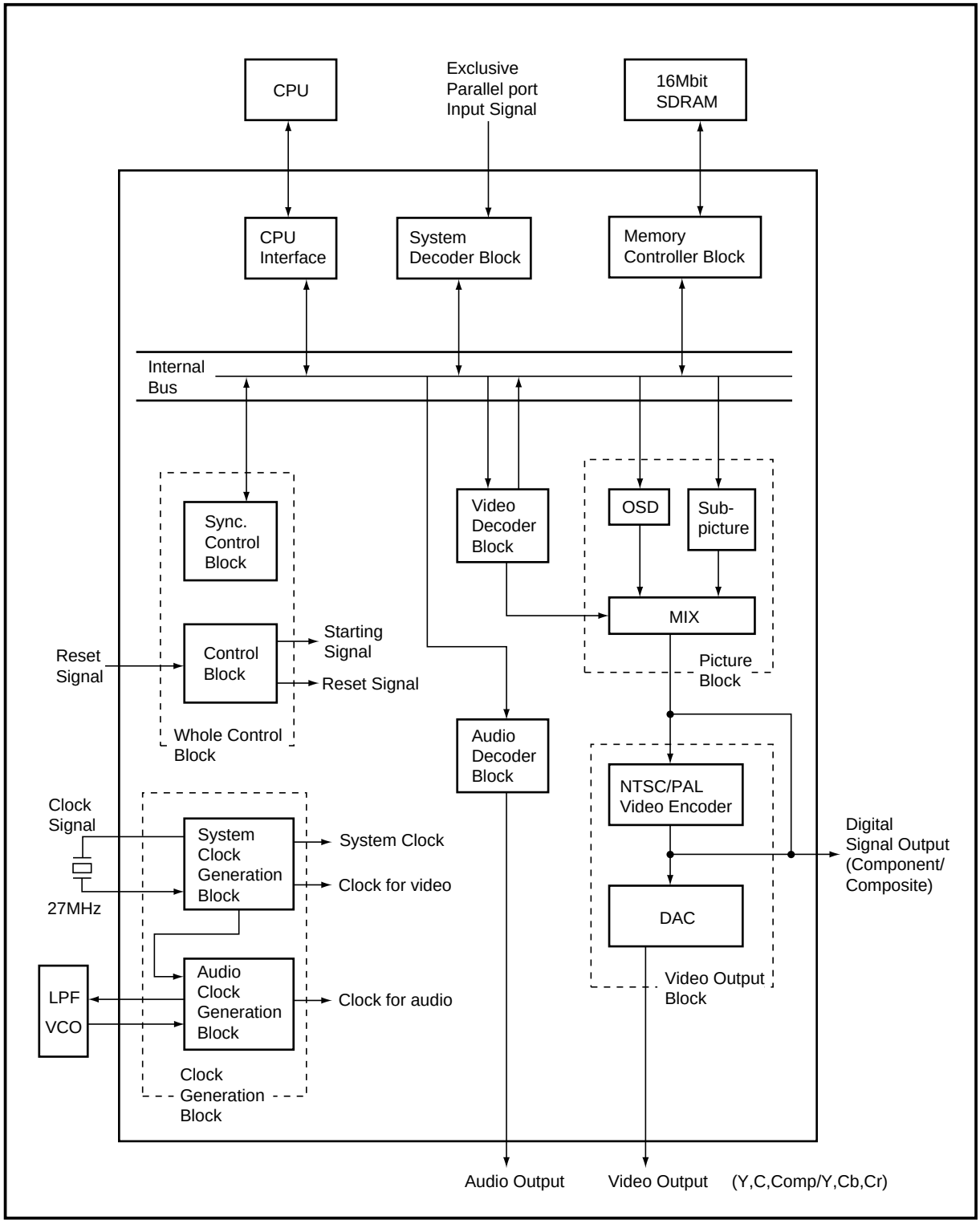
No.	Mark	Pin Name	I/O	Function
83	GND	GND	–	GND
84	AN0	LODPOS	I	Loading position input
85	AN1	SLDPOS	I	Slider position input
86	AN2	DOORSW	I	Not used
87	AN3	NAP_SW	I	NTSC/AUTO/PAL SW input
88	AN4		I	
89	AN5		I	
90	AN6		I	
91	AN7	525IP_SW	I	Not used
92	Avref	V+3D	–	V+3D
93	AVCC	V+3D	–	V+3D
94	AVSS	GND	–	GND
95	PB5/TIOCB4	DIBLK/HFL/ DCNT2	I	Not used
96	PB6/TIOCXA4/TCLKC	C2F	I	C2 error input
97	PB7/TIOCXB4/TCLKD	XRDY	I	Communicatio request input from the FL controller
98	PB8/RxD0	SSI	I	Serial data input (FL controller)
99	PB9/TxD0	SSO	O	Serial data output (FL controller, DAC)
100	VCC	V+3D	–	V+3D
101	PB10/RxD1	RXD	I	Data input of the RS-232C
102	PB11/TxD1	TXD	O	Data output of the RS-232C
103	PB12/XIRQ4/SCK0	SSCK	I/O	Serial clock output (FL controller, DAC)
104	PB13/XIRQ5/SCK1	XIRQL10	I	Interrupt input 1 (MY CHIP)
105	GND	GND	–	GND
106	PB14/XIRQ6	XIRQL11	I	Interrupt input 2 (MY CHIP)
107	PB15/XIRQ7	XINT0/ XAVIRQ0	I	Interrupt input 0 (AV-1)
108	PA0/XCS4/TIOCA0	XCS4	O	Servo DSP chip select signal output
109	PA1/XCS5/XRAS	N.C.	O	Non connection
110	PA2/XCS6/TIOCB0	XCS6	O	AV-1 chip select signal output
111	XWAIT	XWAIT	I	Wait signal input
112	XWRL	XWRL	O	Write pulse output L
113	GND	GND	–	GND
114	XWRH	XWRH	O	Write pulse output H
115	XRD	XRD	O	Read pulse output
116	PA7/XBACK	XCURDET	I	Over-current detection signal input
117	PA8/XBREQ	CTS	I	RS-232C transfer permit input
118	PA9/XAH/XIRQOUT/ XADTRG	DTR	O	RS-232C transfer permit output
119	PA10/DPL/TIOCA1	XAVIRQ1/ XINT1	I	Interrupt input 1 (AV-1)
120	PA11/DPH/TIOCB1	THLD	I	Tracking hold signal input
121	VCC	V+3D	–	V+3D
122	PA12/XIRQ0/DACK0/ TCLKA	DACK0	O	DMA response output (MY CHIP)
123	PA13/XIRQ1/ XDREQ0/TCLKB	XDREQ0	I	DMA request input (MY CHIP)
124	PA14/XIRQ2/XDACK1	XDACK1	O	DMA response output (AV-1)
125	PA15/XIRQ3/XDREQ1	XDREQ1	I	DMA request input (AV-1)
126	AD0	D0	I/O	Data bus 0

No.	Mark	Pin Name	I/O	Function
127	GND	GND	–	GND
128	AD1	D1	I/O	Data bus 1
129	AD2	D2	I/O	Data bus 2
130	AD3	D3	I/O	Data bus 3
131	AD4	D4	I/O	Data bus 4
132	AD5	D5	I/O	Data bus 5
133	AD6	D6	I/O	Data bus 6
134	VCC	V+3D	–	V+3D
135	AD7	D7	I/O	Data bus 7
136	AD8	D8	I/O	Data bus 8
137	AD9	D9	I/O	Data bus 9
138	AD10	D10	I/O	Data bus 10
139	GND	GND	–	GND
140	AD11	D11	I/O	Data bus 11
141	AD12	D12	I/O	Data bus 12
142	AD13	D13	I/O	Data bus 13
143	AD14	D14	I/O	Data bus 14
144	VCC	V+3D	–	V+3D
145	AD15	D15	I/O	Data bus 15
146	A0 (XHBS)	A0	O	Address bus 0
147	A1	A1	O	Address bus 1
148	A2	A2	O	Address bus 2
149	GND	GND	–	GND
150	A3	A3	O	Address bus 3
151	A4	A4	O	Address bus 4
152	A5	A5	O	Address bus 5
153	A6	A6	O	Address bus 6
154	A7	A7	O	Address bus 7
155	A8	A8	O	Address bus 8
156	A9	A9	O	Address bus 9
157	A10	A10	O	Address bus 10
158	A11	A11	O	Address bus 11
159	A12	A12	O	Address bus 12
160	A13	A13	O	Address bus 13
161	A14	A14	O	Address bus 14
162	A15	A15	O	Address bus 15
163	A16	A16	O	Address bus 16
164	A17	A17	O	Address bus 17
165	VCC	V+3D	–	V+3D
166	A18	A18	O	Address bus 18
167	A19	A19	O	Address bus 19
168	A20	A20	O	Address bus 20
169	A21	A21	O	N.C.
170	XNMI	XNMI	I	V+3D
171	GND	GND	–	GND
172	XCS10	XCS10	O	Not used
173	XCS20	XCS20	O	Chip select signal output of the flash ROM
174	XCS22	XCS22	O	Not used
175	XCS23	XCS23	O	Chip select signal output of the SRAM
176	XCS2		O	N.C.

■ MB86373 (PDVDM ASSY : IC801)

- **MPEG2 Decoder IC**

● Block Diagram



● Pin Function

No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
1	CLKSEL	I	ON/OFF signal of PLL ("H" : ON, "L" : OFF)	27	VDD	–	2.5V power supply
2	DIGCPN7	O	Digital component signal output (MSB) Digital Y signal output (9-bit) (MSB)	28	DIGCOMP4	O	Digital composite signal output Digital C signal output
3	VSS	–	GND	29	DIGCOMP3		
4	DIGCPN6	O	Digital component signal output Digital Y signal output (9-bit)	30	DIGCOMP2		
5	DIGCPN5			31	DIGCOMP1		
6	DIGCPN4			32	DIGCOMP0		Digital composite signal output (LSB) Digital C signal output (LSB)
7	DIGCPN3			33	DACK	O	27 MHz clock output
8	DIGCPN2			34	N.C.	–	Non connection
9	DIGCPN1			35	VSSA3	–	GND (D/A converter)
10	VDD	–	2.5V power supply	36	ANAC	O	Analog color (C) output signal
11	DIGCPN0	O	Digital component signal output (LSB) Digital Y signal output (9-bit) (LSB)	37	VDDA3	–	2.5V power supply (for built-in D/A converter only)
12	RBSEL	O	Cb and Cr discrimination signal at the digital component signal output. LSB at the digital Y signal output.	38	VSSA2	–	GND (D/A converter)
13	XHS	O	Horizontal sync. output signal	39	ANAY	O	Analog luminance (Y) output signal
14	XVS	O	Vertical sync. output signal	40	VDDA2	–	2.5V power supply (for built-in D/A converter only)
15	VSS	–	GND	41	VREF	I	Reference voltage for D/A converter
16	XRESET	I	LSI reset signal	42	VRO	O	Internal current setting pin of D/A converter
17	XLDCSYNC	I	External sync. signal input (LD mode)	43	VDDA4	–	2.5V power supply (for built-in D/A converter only)
18	KEY	O	KEY signal for LD and OSD overlay (LD mode)	44	VSSA1	–	GND (D/A converter)
19	PD	O	Phase comparison result output signal of horizontal sync. (LD mode)	45	ANACOMP	O	Analog composite output signal
20	VFLD	O	Field discrimination signal at the digital signal output H : even field L : odd field	46	VDDA1	–	2.5V power supply (for built-in D/A converter only)
21	DIGCOMP9	O	Digital composite signal output (MSB) Digital C signal output (MSB)	47	BF	O	Burst flag signal
22	DIGCOMP8	O	Digital composite signal output Digital C signal output	48	XBLK	O	H/V composite blanking signal
23	DIGCOMP7			49	TEST4	O	Normally, set to "open".
24	DIGCOMP6			50	VSS	–	GND
25	DIGCOMP5			51	TEST0	I	Normally, set to "open".
26	VSS	–	GND	52	TEST1	I	"L" status normally

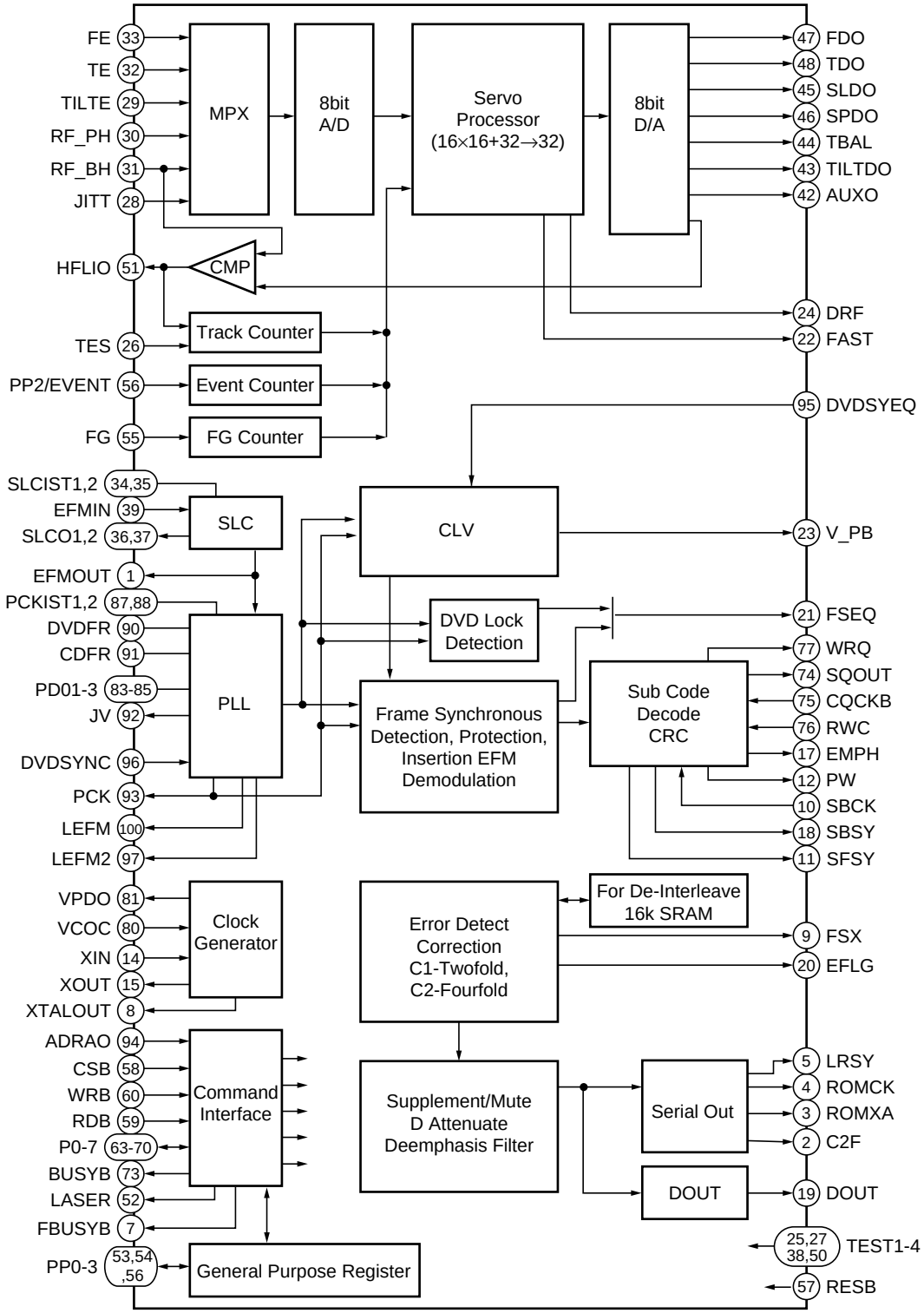
No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
53	DAIIN	I	Digital data input of external input (SPDIF)	92	HADRS10	I	CPU address bus signal (MSB)
54	CDDATA	I	Audio data input of external input (correspond to CD)	93	HADRS9	I	CPU address bus signal
55	CDLR	I	Data channel clock input of external input (correspond to CD)	94	HADRS8		
56	CDBCK	I	Data clock input of external input (correspond to CD)	95	HADRS7		
57	AODATA3	O	Audio decode data	96	VSS	–	GND
58	AODATA2			97	VDD	–	2.5V power supply
59	AODATA1			98	HADRS6	I	CPU address bus signal
60	VSS	–	GND	99	HADRS5		
61	VDD	–	2.5V power supply	100	HADRS4		
62	AODATA0	O	Audio decode data	101	HADRS3		
63	AOPCM	O	Digital audio interface output (compression data)	102	HADRS2		CPU address bus signal (LSB)
64	AODAI	O	Digital audio interface output (decode data)	103	HDATA15	I/O	CPU data bus signal (MSB)
65	LRCK	O	Data channel clock for D/A and digital filter	104	HDATA14		CPU data bus signal
66	AOMCK	O	Master clock for D/A and digital filter	105	HDATA13		
67	BCK	O	Bit clock for D/A and digital filter	106	HDATA12		
68	TEST2	I	Normally, set to "open".	107	VSS	–	GND
69	TEST3			108	HDATA11	I/O	CPU data bus signal
70	NC	–	Non connection	109	HDATA10		
71	XDSPRST	I	Normally, set to "open".	110	HDATA9		
72	VSS	–	GND	111	HDATA8		
73	TEST5	O	Normally, set to "open".	112	HDATA7		
74	NC	–	Normally, set to "open".	113	HDATA6		
75	NC			114	VDD	–	2.5V power supply
76	NC			115	HDATA5	I/O	CPU data bus signal
77	NC			116	HDATA4		
78	SD7	I	Parallel data input	117	HDATA3		
79	VDD	–	2.5V power supply	118	HDATA2		
80	SD6	I	Parallel data input	119	VSS	–	GND
81	SD5			120	HDATA1	I/O	CPU data bus signal
82	SD4			121	HDATA0		CPU data bus signal (LSB)
83	SD3			122	BUSSEL	I	Bus width selection signal (0 : 8-bit bus, 1 : 16-bit bus)
84	SD2			123	XOSDACK	I	OSD data acknowledge signal
85	VSS	–	GND	124	XOSDREQ	O	OSD data request signal
86	SD1	I	Parallel data input	125	HCPUSEL1	I	CPU selection signal (00 :SPARC, 01 :86 system, 10 :68 system, 11 :Reserve)
87	SD0			126	HCPUSEL0		
88	XERR	I	Error input signal	127	XINT3	O	Interrupt request signal to the CPU
89	XSACK	I	Acknowledge signal	128	XINT2		
90	XTEST	I	Set to "H" at normal use	129	XINT1		
91	SREQ	O	Data request signal	130	VSS	–	GND

No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
131	VDD	–	2.5V power supply	170	XMDRCAS	O	CAS signal for SDRAM
132	XINT0	O	Interrupt request signal to CPU	171	XMDRDQM1	O	Input mask / output enable signal for SDRAM
133	XEXTRDY	O	SPARC, 68 system : Ready signal to CPU 86 system : Acknowledge (ACK) signal to CPU	172	VSS	–	GND
134	HRW	I	CPU read / write signal	173	XMDRWE	O	Write enable signal for SDRAM
135	HCLKIN	I	Host clock input	174	XMDRDQM0	O	Input mask / output enable signal for SDRAM
136	XHCS	I	LSI chip select signal	175	MDRDAT8	I/O	Data bus signal for SDRAM
137	XHAS	I	SPARC, 68 system : CPU address strobe 86 system : CPU address status	176	VSS	–	GND
138	XHBE3	I	CPU byte enable signal	177	MDRDAT7	I/O	Data bus signal for SDRAM
139	XHBE2			178	MDRDAT9		
140	XHBE1			179	MDRDAT6		
141	XHBE0			180	MDRDAT10		
142	VSS	–	GND	181	MDRDAT5		
143	MDRADR4	O	Address signal for SDRAM	182	VSS	–	GND
144	MDRADR3			183	VDD	–	2.5V power supply
145	MDRADR5			184	MDRDAT11	I/O	Data bus signal for SDRAM
146	MDRADR2			185	MDRDAT4		
147	VDD	–	2.5V power supply	186	MDRDAT12		
148	VSS	–	GND	187	MDRDAT3		
149	MDRADR6	O	Address signal for SDRAM	188	MDRDAT13		
150	MDRADR1			189	VSS	–	GND
151	MDRADR7			190	MDRDAT2	I/O	Data bus signal for SDRAM
152	MDRADR0		Address signal for SDRAM (LSB)	191	MDRDAT14		
153	MDRADR8		Address signal for SDRAM	192	MDRDAT1		
154	VSS	–	GND	193	MDRDAT15		Data bus signal for SDRAM (MSB)
155	TEST6	I	"L" status normally	194	MDRDAT0	I/O	Data bus signal for SDRAM (LSB)
156	TEST7			195	VSS	–	GND
157	TEST8			196	N.C.	–	Non connection
158	TEST9			197	ICK27M	I	System clock input
159	MDRADR10	O	Address signal for SDRAM	198	VSS	–	GND
160	MDRADR9			199	OCK27M	O	System clock output
161	MDRADR11		Address signal for SDRAM (MSB)	200	VSSA(VCO)	–	GND (for VCO only)
162	XMDRCS	O	Chip select signal for SDRAM	201	VDDA(VCO)	–	2.5V power supply (for VCO only)
163	MDRCKE	O	Clock enable signal for SDRAM	202	ILPF	O	PLL block inverter output for audio
164	VSS	–	GND	203	MLPF	I	PLL block inverter input for audio
165	VDD	–	2.5V power supply	204	OLPF	O	Phase detector output for audio
166	XMDRRAS	O	RAS signal for SDRAM	205	OVCO	I	VCO input for audio clock
167	MDRCLK	O	Clock output signal for SDRAM	206	VSS	–	GND
168	VSS	–	GND	207	XPLLRST	I	PLL section reset signal
169	MDRCLKIN	I	Clock input signal for SDRAM	208	XSYNCRST	I	SYNC reset signal

LC78652W (PDVDM ASSY : IC201)

• DSP IC

● Block Diagram



● Pin Function

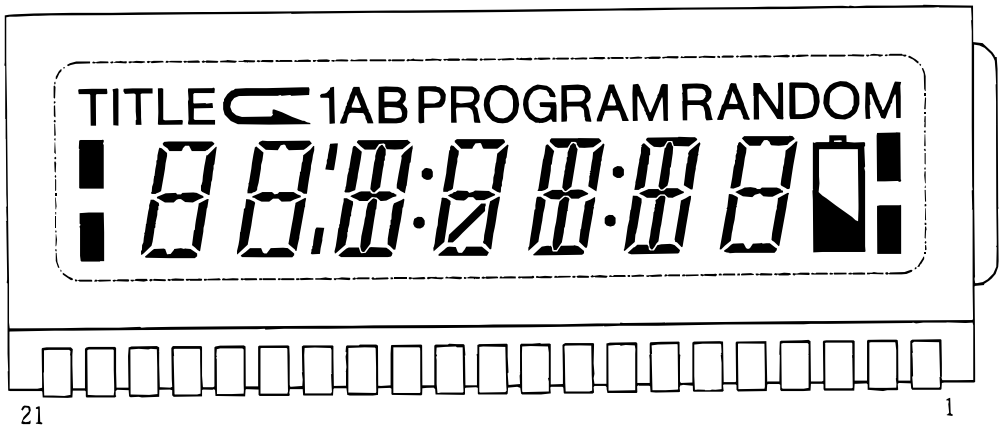
No.	Pin Name	I/O	Function
1	EFMOUT	O	Output the state that was binary-stated value EFM
2	C2F	O	C2 flag output
3	ROMXA	O	CD-ROM data output
4	ROMCK	O	Shift clock output for CD-ROM data output
5	LRSY	O	L/R clock output for CD-ROM data output
6	PP3	I/O	General-purpose port input/output / DVD sync. signal input N ch-OD output
7	FBUSYB	O	Busy signal output of DSP process operation N ch-OD output
8	XTALOUT	O	External system clock output
9	FSX	O	CD 1 frame sync. signal output
10	SBCK	I	Subcode reading out clock input
11	SFSY	O	Frame sync. signal output of subcode
12	PW	O	Subcode P, Q, R, S, T, U, V and W output
13	VSS	–	GND pin
14	XIN	I	Connect a crystal resonator (16.9344MHz)
15	XOUT	O	Connect a crystal resonator
16	DVDD1	–	3.3V power supply of the oscillation circuit
17	EMPH	O	Monitor pin of the deemphasis
18	SBSY	O	Sync. signal output of the subcode block
19	DOUT	O	Audio EIAJ data output
20	EFLG	O	Error correction state monitor of the error correction C1 and C2
21	FSEQ	O	Detection monitor of the CD/DVD frame sync. signal
22	FAST	O	Playback speed monitor N ch-OD output
23	V_PB	O	Monitor output of the rough servo/CLV control
24	DRF	O	In focus monitor
25	TEST3	I	Test input 3
26	TES	I	Tracking error signal input
27	TEST2	I	Test input 2
28	JITT	I	Jitter quantity detecting signal input of EFM PLL
29	TILTE	I	Tilt error signal input
30	RF_PH	I	RF peak hold signal input
31	RF_BH	I	RF bottom hold signal input
32	TE	I	Tracking error signal input
33	FE	I	Focus error signal input
34	SLCIST1	–	Current setting pin 1 of the constant current charge pump for SLC
35	SLCIST2	–	Current setting pin 2 of the constant current charge pump for SLC
36	SLCO1	O	Control output 1 for SLC
37	SLCO2	O	Control output 2 for SLC
38	TEST1	I	Test input 1
39	EFMIN	I	EFM/EFM + input
40	AVDD	–	5V power supply of A/D and D/A for servo
41	AVSS	–	GND of A/D and D/A for servo
42	AUXO	O	DA auxiliary output
43	TILTDO	O	Tilt control signal output
44	TBAL	O	Tracking balance control signal output
45	SLDO	O	Sled control signal output
46	SPDO	O	Spindle control signal output
47	FDO	O	Focus control signal output
48	TDO	O	Tracking control signal output
49	VREF	–	Reference level of D/A for servo
50	TEST4	I	Test input 4

No.	Pin Name	I/O	Pin Function
51	HFLIO	I/O	Mirror detection signal input/output
52	LASER	O	Output pin for laser ON/OFF control
53	PP0/DVD_CDB	I/O	General-purpose port input/output / Disc discrimination signal output
54	PP1/CRCERRB	I/O	General-purpose port input/output / Subcode CRC result signal output
55	FG	I	FG counter input
56	PP2/EVENT	I/O	General-purpose port input/output / Event counter input
57	RESB	I	Reset input
58	CSB	I	Chip select input
59	RDB	I	Internal state reading signal input
60	WRB	I	Command / data writing signal input
61	DVDD2	–	5V power supply
62	VSS	–	GND
63	P0	I/O	Command / data input/output
64	P1		
65	P2		
66	P3		
67	P4		
68	P5		
69	P6		
70	P7		
71	VSS	–	GND
72	DVDD1	–	3.3V power supply for internal
73	BUSYB	O	Busy signal output of command process
74	SQOUT	O	Serial output of subcode Q
75	CQCKB	I	Shift clock input for subcode Q data output
76	RWC	I	Update permission input of subcode Q
77	WRQ	O	Read out ready monitor of subcode Q
78	AVSS	–	PLL GND for internal system clock
79	VRPFR	–	VCO oscillation range setting of PLL for system clock
80	VCOC	I	Connect a PLL filter for system clock
81	VPDO	O	
82	AVDD	–	PLL 5V power supply for system clock
83	PDO1	I/O	PLL filter connection pin 1 for EFM playback
84	PDO2	I/O	PLL filter connection pin 2 for EFM playback
85	PDO3	I/O	PLL filter connection pin 3 for EFM playback
86	AVSS	–	PLL GND for EFM playback
87	PCKIST1	–	Current setting 1 of PLL constant current charge pump for EFM playback
88	PCKIST2	–	Current setting 2 of PLL constant current charge pump for EFM playback
89	AVDD	–	PLL 5V power supply for EFM playback
90	DVDFR	–	VCO oscillation range setting of PLL for EFM playback 1
91	CDFR	–	VCO oscillation range setting of PLL for EFM playback 2
92	JV	O	Jitter output of PLL clock for EFM playback
93	PCK	O	Bit clock output for EFM playback
94	ADRAO	I	Address input
95	DVDSYEQ	I	DVD synchronize pulse input
96	DVDSYNC	I	DVD synchronous signal input
97	LEFM2	O	Output the state that cut and out a signal which was binary-stated value EFM with PCK 2
98	DVDD1	–	3.3V power supply for I/O
99	VSS	–	GND
100	LEFM	O	Output the state that cut and out a signal which was binary-stated value EFM with PCK 1

7.2.2 DISPLAY

■ VAW1051 (V2001 : PDVDS ASSY)

• LCD



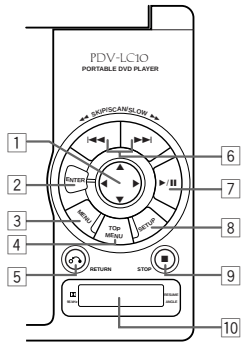
● Pin Connection

NO	COM1	COM2	COM3	COM4
1	S6	6B	6C	S7
2	7A	7B	7C	S5
3	7F	7G	7E	7D
4	6A	6H	6D	RAN
5	6F	6G	6E	CO2
6	PRO	5B	5C	T1
7	5A	5H	5D	B
8	5E	5G	4C	4D
9	5F	4B	4G	4H
10	4A	4F	4E	CO1
11	A	3B	3C	S3
12	3A	3H	3D	1
13	3F	3G	3E	S4
14	2A	2B	2C	2D
15	2F	2G	2E	S1
16	1A	1B	1C	1D
17	1F	1G	1E	S2
18	—	—	—	COM4
19	—	—	COM3	—
20	—	COM2	—	—
21	COM1	—	—	—

8. PANEL FACILITIES AND SPECIFICATIONS

8.1 PANEL FACILITIES

Main unit control section



1 Cursor buttons (▲, ▼, ◄ and ►)
Press these to select menu and top menu items or to set items on the setup screen.

2 ENTER button
Press this to enter settings.

3 MENU button
Press this to display the DVD's menu screen.

4 TOP MENU button
Press this to display the DVD's top menu screen.

5 RETURN button (↩)
Press this to return to the previous item.

6 Previous/next buttons (I◄◄ and ►►I)
Use these buttons to scan forward or backward through pictures or sound , to search for the beginnings of tracks or chapters , for step-by-step playback and for slow playback .

I◄◄ : Reverse direction
►►I : Forward direction

Hold scan function
Scanning is held when the previous or next button (I◄◄ or ►►I) is held in for over 5 seconds. Press the play button to switch back to the play mode.

Step-by-step playback
Press the previous or next button (I◄◄ or ►►I) while in the pause mode for step-by-step playback.

Slow playback
Press and hold in the previous or next button (I◄◄ or ►►I) while in the pause mode for slow playback.

7 Play/pause button (►/II)
Press this to play pictures or sound. When pressed in the play mode, the still frame (for pictures) or pause (for sound) mode is set. Press again to resume playback.

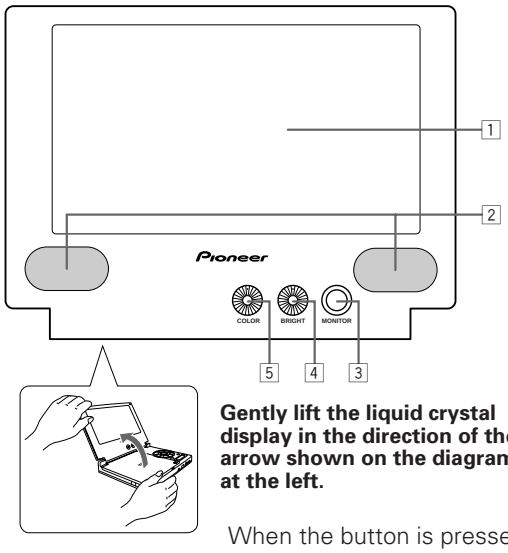
8 SETUP button
Press this to display the setup screen. The setup screen can be called out at any time, whether in the play or stop mode and regardless of the type of disc. Press the SETUP button again to turn the setup screen off after entering the settings.

9 STOP button (■)
Press this to stop the currently playing picture or sound.

10 Display window
The player's operating status is displayed here.

Liquid crystal display

The PDV-LC10 portable DVD player is equipped with a liquid crystal display.



Gently lift the liquid crystal display in the direction of the arrow shown on the diagram at the left.

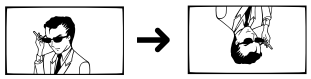
1 Liquid crystal display

2 Speakers

3 MONITOR button
Press this to switch the screen size. The screen size switches as follows each time the button is pressed:

Normal (4:3) → Full (16:9) → Zoom → Off

When the button is pressed for approximately 1 second, the picture turns upside-down.

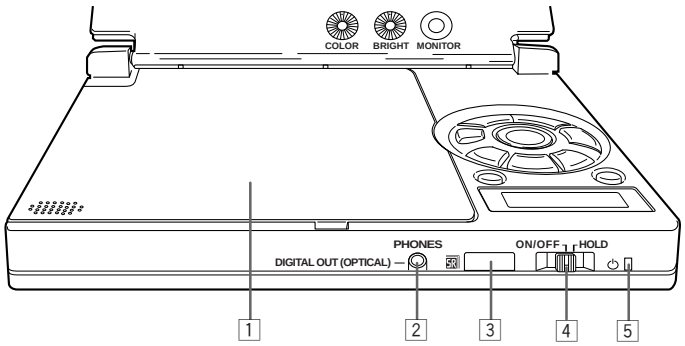


Press the button again to turn the picture right-side up.

4 BRIGHT control
Use this to adjust the liquid crystal display's brightness.

5 COLOR control
Use this to adjust the color depth.

Main unit front panel



1 **Lid**

2 **PHONES/DIGITAL OUT (OPTICAL) jack**
To connect stereo headphones or an amplifier, connect the stereo minijack or optical digital cable here.

3 **Remote sensor**
The remote control signals are received here.

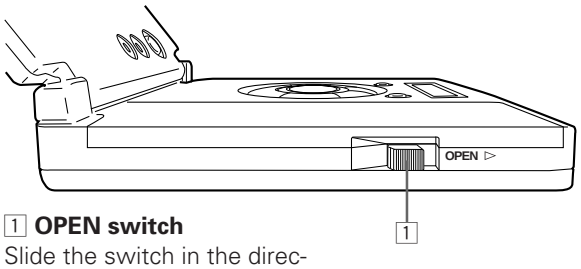
4 **Power ON/OFF/HOLD switch**
Slide the power switch to the ON/OFF side and hold it there for at least 1 second to turn the player's power on and off. The hold (accidental operation prevention) function is turned on when the switch is slid to the HOLD side.

Hold function
The hold function disables the control buttons, so the currently playing picture or sound is not interrupted even if a control button is pressed accidentally during playback. "HOLD" appears on the main unit's display window if a control button is pressed while the hold function is on.
Only the power button on the remote control unit functions when the hold function is on.

5 **Power indicator**
Off: The power is off.
Turn on the power using the main unit's power switch.
Red: The power is set to the standby mode.
Turn on the power using the power switch on the main unit or the power button on the remote control unit.
Green: The power is on.

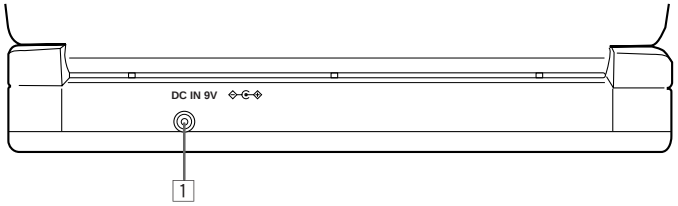
Side Panel

Main unit left side



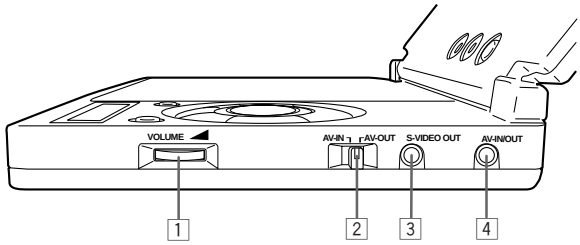
1 **OPEN switch**
Slide the switch in the direction of the arrow (to the right) to open the lid.

Main unit rear panel



1 **DC IN jack**
Connect the included AC adapter here.

Main unit right side



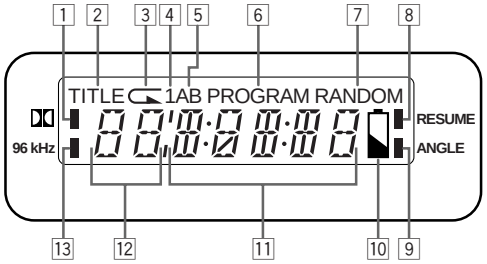
1 **VOLUME control**
Use this to adjust the volume of the speakers or headphones.

2 **Audio/video input/output selector switch (AV-IN/AV-OUT) (PDV-LC10 only)**
Select input or output according to how you are using the audio/video input/output jack
- Always set to the AV-OUT side when you want to play discs.
- When set to the AV-IN side, "AV-IN" appears on the main unit's display window.

3 **S-Video output jack (S-VIDEO OUT)**
To connect the player to a TV equipped with an S-Video input jack, connect the included S-Video cable here. This jack is S2-compatible.

4 **Audio/video input/output jack (AV-IN/OUT)**
To connect the player to a TV, connect the included AV cable here. Select input or output with the AV-IN/AV-OUT selector switch 2.

Main unit display window



1
This lights when playing discs recorded in Dolby Digital.

2 **TITLE**
This lights when the information displayed in section 12 of the display is title information and when in the title repeat play mode (for DVDs only).

3
This lights when in the repeat play mode.

4 **1**
This lights when in the single repeat play mode.

5 **AB**
This lights when in the AB repeat play mode.

6 **PROGRAM**
This lights when in the programmed play mode.

7 **RANDOM**
This lights when in the random play mode.

8 **RESUME**
This lights when the resume function is on.

9 **ANGLE**
This lights when the angle can be changed while playing DVDs.

10
This lights when the remaining battery power is low and flashes when the battery is about to run out of power.

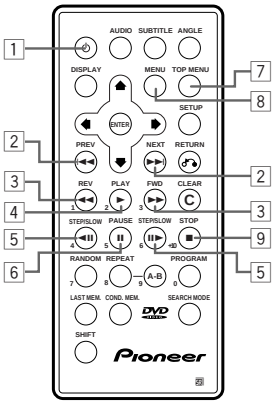
11
During playback, the elapsed time of the current title (for DVDs) or track (for video CDs or CDs) is displayed here.

12
The title or chapter number (for DVDs) or the track number (for video CDs and CDs) is displayed here.

13 **96 kHz**
This lights when playing DVDs recorded in 96 kHz linear PCM.

Hint:
This display window also has the function of displaying the player's operating status in real time.

Remote control unit (frequently used



1 **Power button**
The power turns on and off when this button is pressed while the power indicator on the main unit is lit red.

2 **PREVIOUS/NEXT buttons (|◄◄ and ►►|)**
Use these buttons to search for the beginnings of tracks or chapters.
|◄◄ : Reverse direction
►►| : Forward direction

3 **Scan buttons (◄◄ and ►►)**
Use these buttons to scan forward and backward through pictures or sound.

◄◄ : Reverse direction
►► : Forward direction

4 **PLAY button (►)**
Use this button to play pictures or sound.

5 **STEP/SLOW buttons**
◄II : Press this button once for step-by-step playback in the reverse direction.
Press and hold the button in for slow playback in the reverse direction.
II► : Press this button once for step-by-step playback in the forward direction.
Press and hold the button in for slow playback in the forward direction.

6 **PAUSE button (II)**
Press this button to stop the picture or sound temporarily.

7 **TOP MENU button**
Press this button to display the DVD's top menu screen.

8 **MENU button**
Press this button to display the DVD's menu screen.

9 **STOP button (■)**
Press this button to stop playback of the picture or sound.

8.2 SPECIFICATIONS

General

DVD, video CD and compact disc digital audio system

Power requirements

AC 100 to 240 V, 50/60 Hz (AC adapter) (included)

Battery pack (nickel hydrogen), 8.4 V, 4500 mAh) (included)

Power consumption

20 W (PDV-LC10, during DVD playback, AC adapter/220 to 240 V)

8 W (PDV-10, during DVD playback, AC adapter/220 to 240 V)

1.6 W (standby, AC adapter/220 to 240 V)

Main unit weight

690 g (PDV-LC10)

370 g (PDV-10)

External dimensions

190 (W) x 142 (D) x 28 (H) mm (PDV-LC10) (not including protruding parts)

190 (W) x 142 (D) x 18 (H) mm (PDV-10) (not including protruding parts)

Operating temperature

+5°C to +35°C

Operating humidity

5% to 85% (no condensation)

S video output

Y output level	1 Vp-p (75 ohm)
C output level	286 mVp-p (75 ohm)
Output jack	3-pole minijack

AV input/output (PDV-LC10)

Video input/output level	1 Vp-p (75 ohm)
Audio input/output level	150 mVrms (1 kHz, –20 dB)
Input/output jack	4-pole minijack, input/output switching type

AV output (PDV-10)

Video output level	1 Vp-p (75 ohm)
Audio output level	150 mVrms (1 kHz, –20 dB)
Output jack	4-pole minijack

Digital audio output characteristics

Frequency response	4 Hz to 44 kHz (DVD) 4 Hz to 20 kHz (CD)
Wow and flutter	Limit of measurement ±0.001% W. PEAK) or lower (EIAJ)

Other terminals

Headphones/optical digital output terminal Mini optical connector

Liquid crystal display (PDV-LC10 only)

α-Si TFT active matrix 7.0" wide liquid crystal display

Accessories

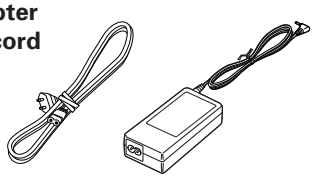
Card type remote control unit (w/ lithium battery)	1
AV cable	1
S-Video cable	1
AC adapter	1
Power cord	1
Optical fiber cable (ZY, ZU/CA Only)	1
Operating instructions	1
PDV-LC10 only	
Battery case	1
Charger	1
Battery pack	1
Power cord	1

Note

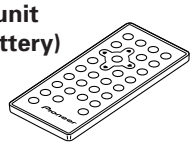
The specifications and design of this product are subject to change without notice, due to improvement.

Accessories

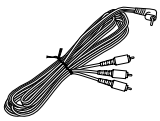
AC adapter
Power cord



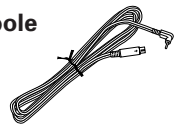
CU-PDV003 card remote control unit (with lithium battery)



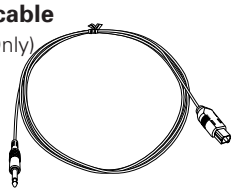
AV cable (4-pole miniplug - RCA x 3)



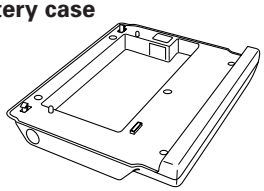
S-Video cable (3-pole miniplug - S plug)



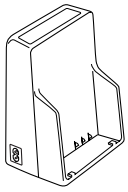
Optical fiber cable
(ZY, ZU/CA Only)



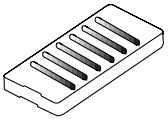
PDV-LC10 only:
Battery case



Charger



Battery pack



Power cord

Operating instructions